AUGUST, 1933

# COTTON

*Serving the*
TEXTILE INDUSTRIES

ANNOUNCING

THE THREAD
DEPARTMENT *of the*
STANDARD-COOSA-THATCHER
COMPANY . . . . . *With*

a Complete Line of Threads for the Garment and Shoe Trades backed by 51 Years' Experience in Spinning Cotton Yarns of High Quality.

STANDARD-COOSA-THATCHER COMPANY
CHATTANOOGA, TENNESSEE

*Branch Offices*
Boston, Mass. . . . . W. L. FABYAN, Mgr., 211 Albany Bldg., 179 Lincoln St.
Rochester, N. Y. . . . . R. A. KELLEY, Mgr., 82 St. Paul St.
St. Louis, Mo.: R. A. NELSON, Mgr., 310 Leather Trades Bldg., 1602 Locust St.
Chicago, Ill.: M. A. HENDERSON, Mgr., 940 Merchandise Mart, 222 N. Bank Drive

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Volume 97.
Number 8.

COTTON

August, 1933

# QUALITY WINS AGAIN

Trade Mark Registered

*Village of Clifton Mill No. 3, at Converse, S. C. Two coats of S-W MILL VILLAGE PAINT, Fall 1932.*

*Close-up of Village of Clifton Mill No. 5 at Converse, S. C.*

## Sherwin - Williams Mill Village Paint demonstrates its greater economy on Clifton and Draper Corporation Villages

● Day after day, month after month, year after year, the *quality* of Sherwin-Williams Mill Village Paint is proving its greater economy to textile mill owners.

Mill Village Paint is a high quality combination pigment paint made for the protection of exposed surfaces of mills and cottages. It is made of the *highest grade* materials — and its formula is ideally *balanced* to give the utmost in protection and easy working qualities. Its use on mill and cottage surfaces inevitably results in *lowered painting costs,* due to three outstanding characteristics:

1—*Greater covering capacity*—fewer gallons are needed.

2—*Lower labor cost* —because of its easier working qualities; a painter can cover more surface per day.

3—*Wears longer* — thereby reducing the frequency with which repainting is needed—which means a reduction in BOTH labor and material cost, at one and the same time.

Your request for information relative to Sherwin-Williams Standard Products for Textile Mill and Village surfaces, as applied to your specific problem, entails no obligation. Write The Sherwin-Williams Company, Cleveland, Ohio.

TEXTILE OFFICES: Philadelphia—Charlotte—Spartanburg, S. C.—Atlanta—Nashville—Newark, N. J.—Boston, Mass.

Warehouse connections at all offices carry stock for prompt service to the textile trade.

*Village of the Draper Corporation Mill, Spartanburg, S. C. — painted with S-W MILL VILLAGE PAINT, Spring '32*

# SHERWIN-WILLIAMS

**STANDARD PRODUCTS FOR TEXTILE MILLS AND VILLAGES**

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

# The C Model Loom

(For 1 x 1 Weaves)

A Shuttle-Changer

That Shifts Shuttle

With No Lost Picks

Shuttle is Boxed

With Minimum Shock

More Time for

Shuttle in the Shed

A Loose Reed

Prevents Smashes

No Daggers

No Frogs

No Starting Marks

Picks Evenly Laid

Ends Weaving Troubles

You Have Thought

Were Necessary in

the Weaving

of Rayons

It Weaves

Better Fabrics

And at Lower Cost

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

# An Entirely New Idea in Humidifiers
# An Atomizer Head

*Which:*

Vaporizes approximately 50% more water per horsepower than ordinary atomizers.

Vaporizes as much water per horsepower as humidifiers using water only under pressure.

Operates at low air pressure.

Delivers water to the vaporizing nozzle under pressure, which prevents clogging of water passages and assures a constant and uniform supply of water.

Requires no routine cleaning and so little maintenance that it is guaranteed for three years against repair parts.

Is entirely automatic; lowering the air pressure shuts off the water, so that it cannot "wet down."

Uses every ounce of available energy in vaporizing the water; no energy wasted pulling water into the head.

Costs less to install because improved vaporizing method enables smaller operating equipment to supplant larger and more expensive compressors and pumps.

This remarkable new humidifier head is the outcome of 25 years experience in making and installing some of the largest humidifying systems in the country. It is simple and logical in design and operation, and truly gives

*"More Moisture For Less Money"*

*Made by*

## R. I. HUMIDIFIER & VENTILATING CO.

**Boston, Mass.**

*Exclusive Southern Agents*

## AldricH MachinE

**Greenwood, WorkS South Carolina**

# What has building news to do with the Textile Industry?

## . . . PLENTY . . . Let's look at the record, especially of the past few months

PRIVATELY financed building operations contracted for in 37 Eastern States totaled more than 98 millions for May and half of June.

This compares most favorably with the entire months of May and June of last year. And still further—the first fifteen days of June almost equalled, in contracts awarded, the entire month of June, 1932.

About $800,000,000 worth of building will be awarded for public works during the last half of 1933. This will be augmented by the already-rising tide of private work.

Every industry depends upon purchasing power, and all of this building means that people will be working and buying. Clothing will form a big part of their expenditures, for again we repeat the observation—that depressions are over when men get down to their last pair of pants.

Already the Textile Industry is feeling the impetus of new buying. Mills all over are busy and fabrics have to be finished.

In the knowledge of the inquiries which we are receiving, and the quotations being made, we urge you to write us at once if you contemplate the purchase of additional finishing machinery for we would like to uphold the Butterworth reputation for prompt deliveries.

**H. W. BUTTERWORTH & SONS CO.**

*Established 1820*

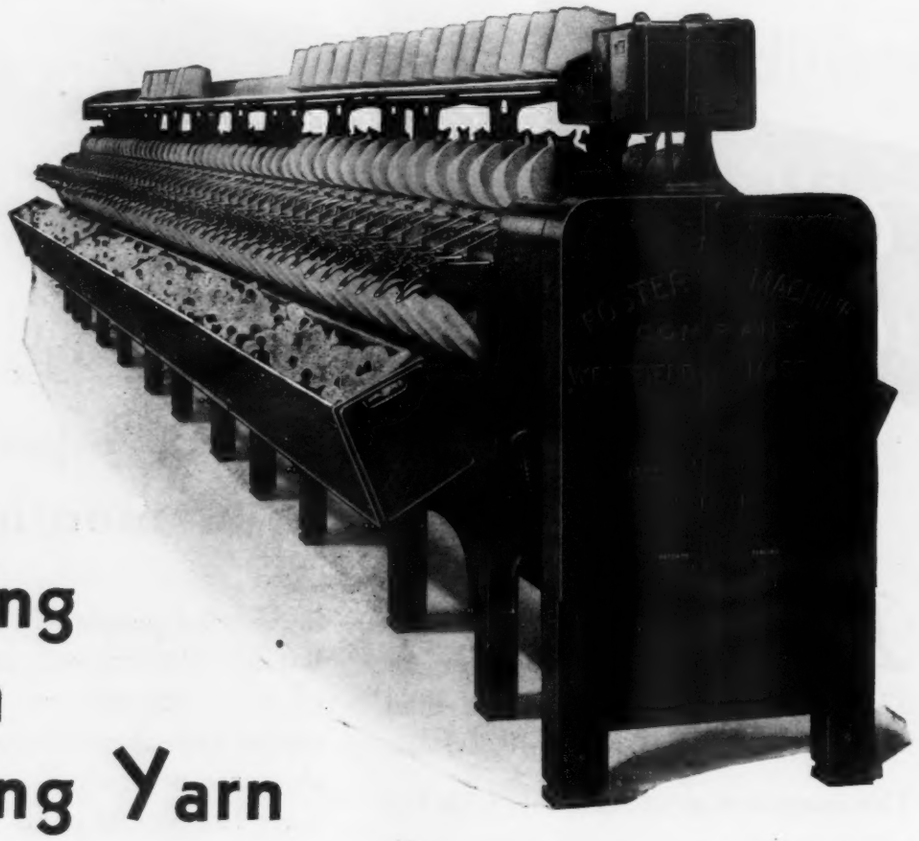
PHILADELPHIA, PA.

PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

| *New England Office:* | *Southern Office:* | *In Canada:* |
|---|---|---|
| TURKS HEAD BUILDING | JOHNSTON BUILDING | W. J. WESTAWAY CO. |
| Providence, R. I. | Charlotte, N. C. | Hamilton, Ontario |

**BUTTERWORTH *Finishing* MACHINERY**

A COMPLETE LINE OF RAYON AND FINISHING MACHINERY FOR THE TEXTILE INDUSTRY



# Cone Winding Cotton Knitting Yarn

CONE WINDING the last process in the Spinning Mill making yarn for Knitting, is the Mill's most important process.

The care and skill put into the production of a high grade yarn is rendered nil if the finishing process is not up to date.

The Foster Model 102 Cone Winder is a refinement of former Cone Winding processes, retaining all the time-approved features of the Foster Cone of former Models and adding more delicate manipulation of the yarn while winding, exact lay of coils on the cone surface to reduce variation in tension from the cone on Knitting Machine and additional slub-catching, making the 102 Foster Cone more than ever before the

*"Standard Knitting Package"*

## Foster Machine Company

**WESTFIELD, MASSACHUSETTS.**

**FRED P. BROOKS, REPRESENTATIVE, P. O. BOX 941, ATLANTA, GA.**

# *Now that the* QUESTION *of* WORKING HOURS *has been adjusted . . .*

The problem of operation under controlled production is paramount and must be solved through individual initiative and decision.

Existing productive machinery must be brought into balance while restricted hours of operation mean higher related costs and controlled output.

Elimination of waste is therefore inseparable from a policy of discarding unnecessary intermediate processes, and replacement of ALL machines which result in high cost figures, wherever they exist.

Never in the history of the industry has the importance of machine-balance been so vital to the well-being of the individual plant and its organization — employer and employed.

Balanced machine-productivity, or lack of it, will determine your share in the opportunity for profit under Governmental administration of the National Industrial Recovery Act.

The next two years will demonstrate, as never before, the ability of individual management to maintain command of markets and to secure a fair profit.

*Are* YOU *Prepared?*

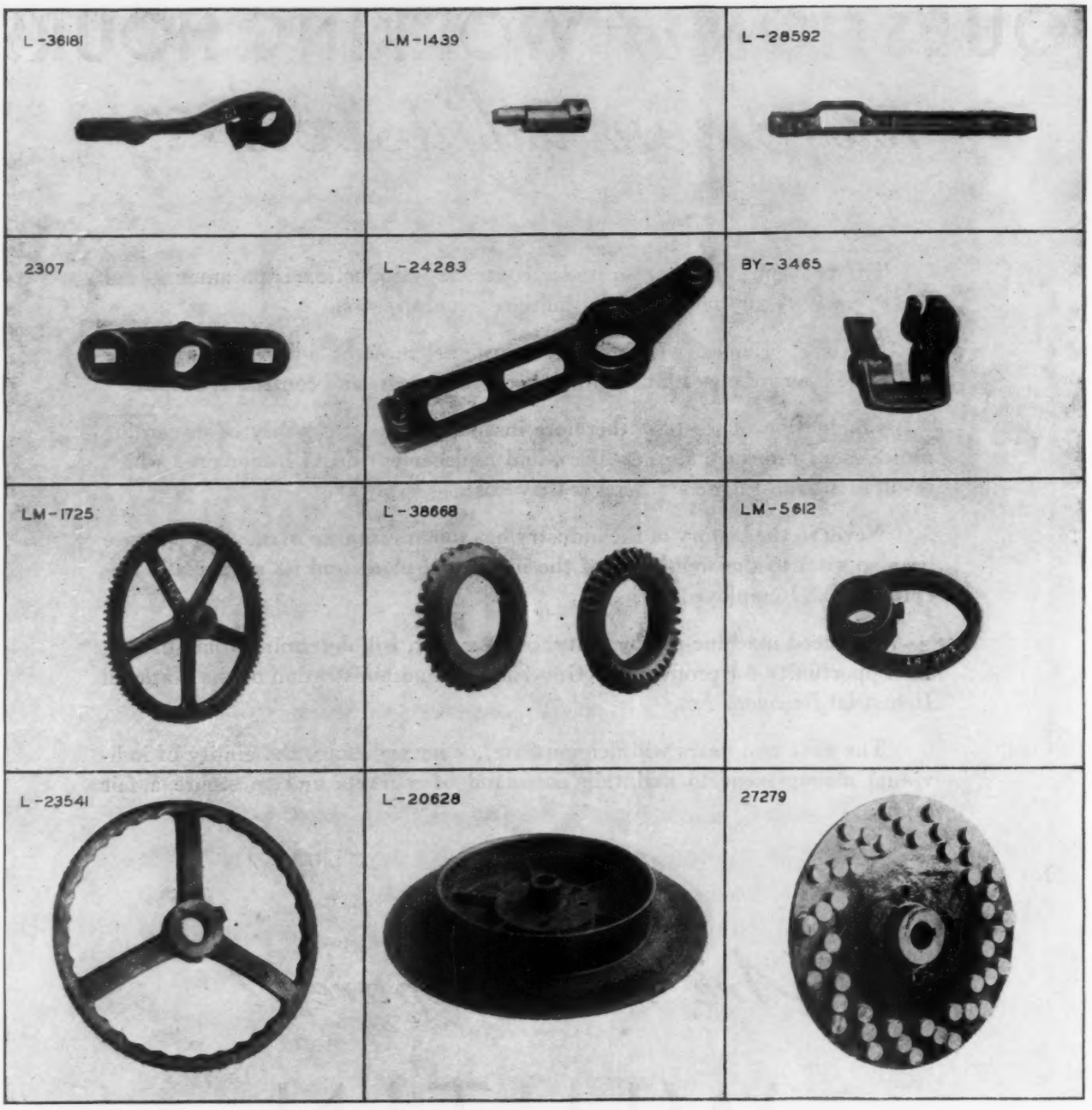
WHITIN
MACHINE WORKS

Charlotte, N. C. Whitinsville, Massachusetts, U. S. A. Atlanta, Ga.

ESTABLISHED 1831

# Substantial Savings!

A constantly increasing number of the leading textile mills are cutting their maintenance costs through using HENDERSON Superior Repair Parts. They are taking advantage of the savings we offer through low overhead and close location to Southern mills.

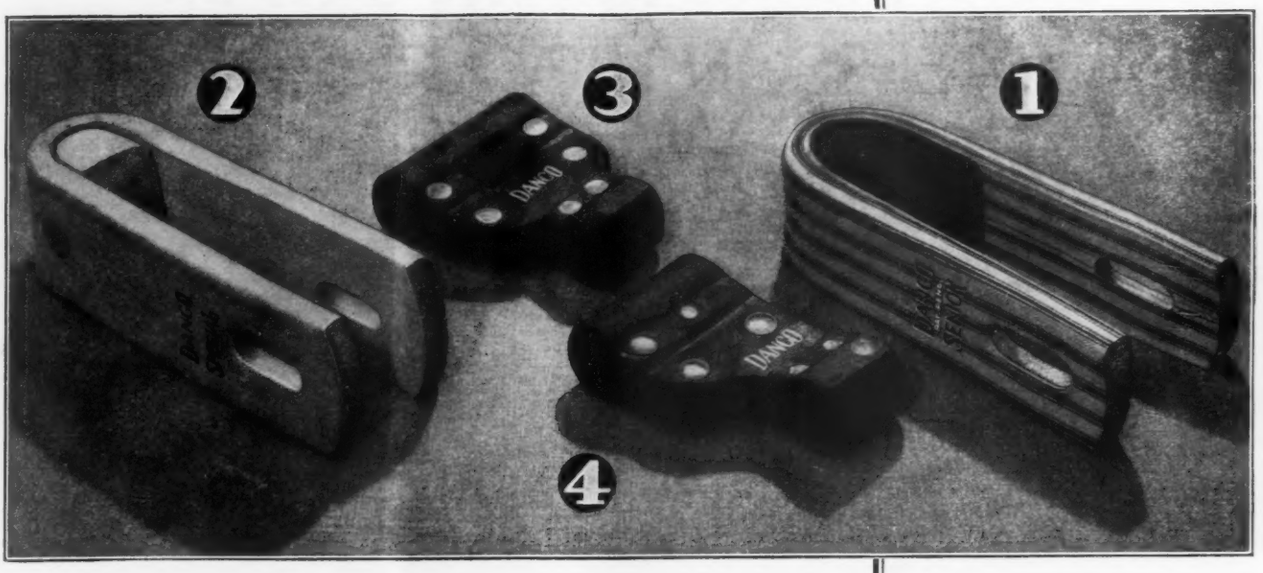



The HENDERSON complete line of repair parts are of the highest quality materials and made from precision patterns—parts you can depend upon for long, trouble-free service.

*ANTICIPATE HIGHER COSTS BY PLACING YOUR ORDERS AT ONCE, OR SEND SAMPLE PART AND LET US QUOTE YOU PRICES.*

**HENDERSON FOUNDRY & MACHINE WORKS**

**HAMPTON, . . . . . GEORGIA.**




# WHAT *we mean by* "STANDARDIZED QUALITY"

We offer the same quality today that we offered yesterday and the same quality tomorrow that we offer today, except when we discover a way to improve our products. That is what we mean by "standardized quality."

Standardization of quality is maintained by confining the purchase of raw materials to a limited number of dependable sources, by eliminating the human equation with semi-automatic machinery wherever possible, and also by careful inspection. Where practical, materials are required to pass a minimum standard of performance. For instance, all fabrics used must pass breaking tests.

If you want the best in quality of materials and in workmanship not only sometimes but ALL times, specify DANCO loom supplies and look for the name stamped in gold to make sure that you get them.

# DANCO
## LOOM SUPPLIES

RAWHIDE PICKERS
LOOP PICKERS
PICKER LOOPS
STRAPPING

CANVAS LUG STRAPS
LEATHER LUG STRAPS
WOODEN LUG STRAPS

DOBBY CORDS
CHECK STRAPS
SPINDLE BUMPERS
HOLD-UPS

**1** DANCO SENIOR LUG STRAP (patent applied for.) A heavy duty product designed especially for narrow looms of the Draper and Stafford type. Its built-in (not built-on) strength assures long service at minimum cost. It has the same amount of material throughout, thus assuring maximum resistance at ALL points and to all types of stress and wear.

**2** DANCO SPECIAL LUG STRAP. Specially designed for heavy duck and woolen looms. It is made of standard army duck with two ply yarns in both warp and filling, and has a plug at the back which is machine riveted in place. Extra width gives more power and longer wear.

**3-4** DANCO RAWHIDE PICKERS. Made of the best selected water-buffalo hides from Java. A product of the very latest semi-automatic machinery specially designed for the purpose. Long life and consistent performance. No. 3 for cotton looms; No. 4 for worsted.

**DANIELSON**
**MANUFACTURING CO.**
**DANIELSON, CONN.**

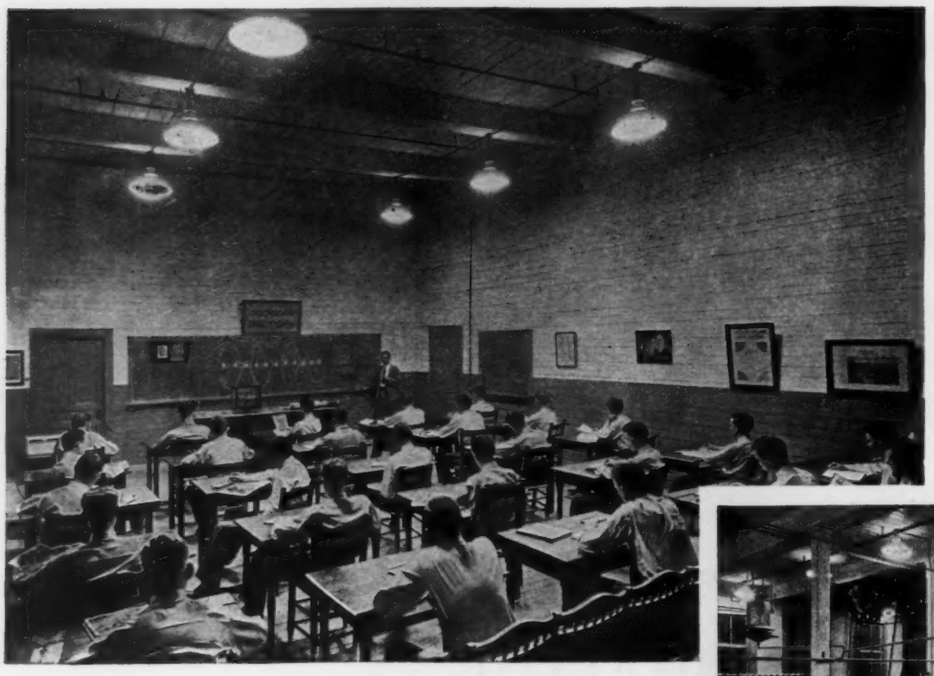
Offices and Warehouses:

THE RUSSELL, MILHENCH & HARRISON COMPANY
New Bedford, Mass.

THE TEXTILE WAREHOUSE COMPANY
Greenville, S. C.

THE RUSSELL A. SINGLETON COMPANY
Dallas, Tex.

# *Future textile executives get an* OBJECT LESSON in GOOD LIGHTING



**DESIGN ROOM**
Units used:—300-watt Glassteel Diffuser Units. Spacing:—11′ x 12′; Mounting:—13′ 6″; Wattage:— Approx. 2¼ watts per square foot; Intensity:—14 to 16 foot-candles.

**SPINNING DEPARTMENT**
Units used:—300-watt Glassteel Diffuser Units. Spacing:—11′ x 14′; Mounting:—13′ 6″ off floor; Wattage:—Approx. 2 watts per square foot; Intensity:—12 to 15 foot-candles.

CLEMSON College, of South Carolina, practices what it teaches. In the Textile Department—work at the roving, carding and spinning machines drives home the lessons of the text books. Good lighting is taught as the first principle of good work and good management . . . and the lighting in the classroom is an object lesson of its value.

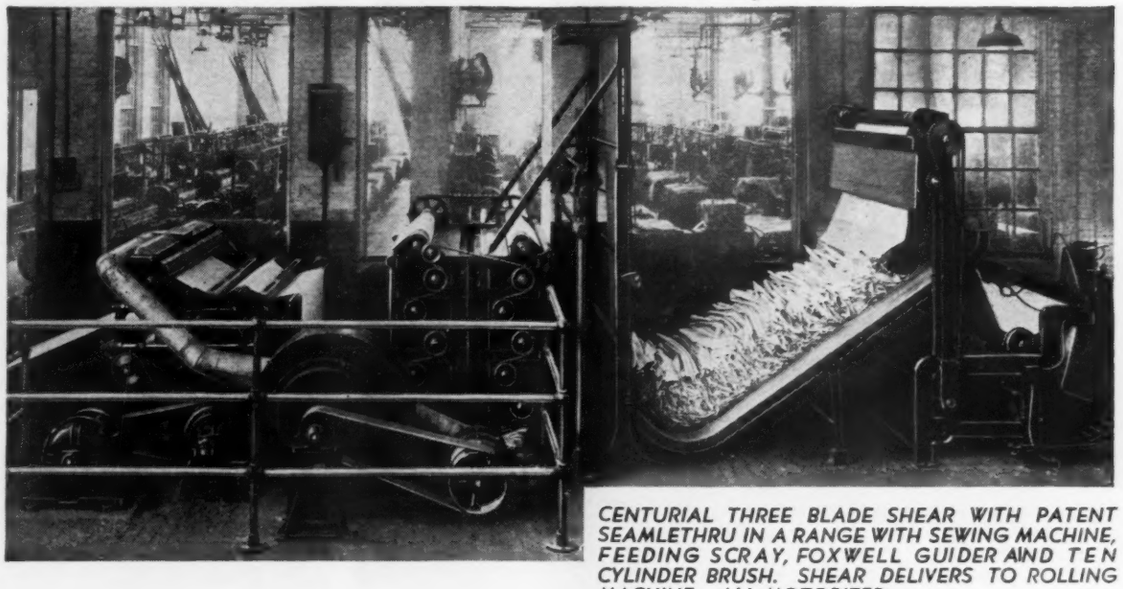
The pictures above show how Clemson College puts this precept into practice. They were taken with the aid of the overhead lighting alone. No other light sources were used. Note how clearly the details were seen by the eye of the camera. Think how much more vividly they were seen by the eyes of the students . . . think how much pride those boys took in their work . . . think how much more precision it added to their efforts.

And if good lighting is important in the classroom—consider how much more important it is in the mill. Higher morale of the workers—greater output—less spoilage—fewer accidents—are some of the dividends paid by modern mill lighting.

A survey of your lighting may reveal ways to cut costs and increase your profits. Our engineers will make such a survey for you without charge or obligation. Write General Electric Company, Nela Park, Cleveland, Ohio.

**CARDING AND ROVING DEPARTMENTS**
Units used:—200-watt Glassteel Diffuser Units. Spacing:—12′ x 12′ 6″; Mounting:—13′ 6″ off floor; Wattage:—2 watts per square foot; Intensity:—12 to 15 foot-candles.

GENERAL ELECTRIC
MAZDA LAMPS



*CENTURIAL THREE BLADE SHEAR WITH PATENT SEAMLETHRU IN A RANGE WITH SEWING MACHINE, FEEDING SCRAY, FOXWELL GUIDER AND TEN CYLINDER BRUSH. SHEAR DELIVERS TO ROLLING MACHINE. ALL MOTORIZED.*

*FROM ACTUAL PHOTOGRAPH TAKEN IN PROMINENT SOUTHERN MILL*

# AUTOMATIC COTTON SHEAR

## NO SHEAR TENDERS

## ONE MAN RUNS MANY MACHINES

THIS ENTIRE RANGE PAID FOR ITSELF IN SHEAR TENDER LABOR SAVED A LONG TIME AGO.

PERFECTLY CLEANS BOTH SIDES OF THE CLOTH IN ONE RUN. A MAN OCCASIONALLY SUPPLIES CLOTH IN FRONT AND TAKES IT AWAY IN BACK. OTHERWISE RUNS ITSELF.

THE SEAMLETHRU OPENS ONLY FOR THE SEWING AND NEVER DAMAGES EITHER BLADES OR CLOTH.

**WE PUT THIS ATTACHMENT ON ANY MAKE OF SHEAR**

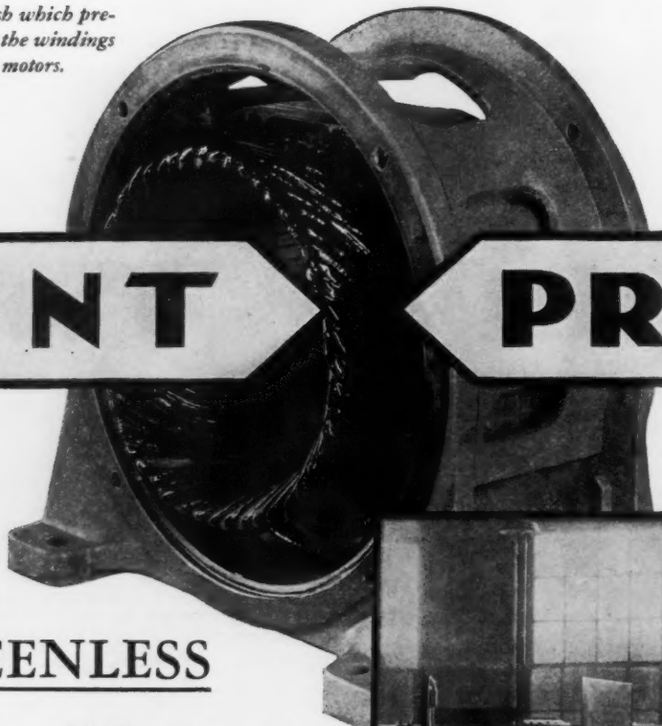
---

**P. B. RAIFORD, JR., CONCORD, NORTH CAROLINA**

*SOUTHERN REPRESENTATIVE*

**PARKS & WOOLSON MACHINE CO., SPRINGFIELD VERMONT**

*Notice the glass-smooth finish which prevents lint from clinging to the windings in Westinghouse Lint-proof motors.*



# • LINT PROOF

## SCREENLESS

# *Textile Motors*

# Cut Your Cleaning Costs

LINT that gets into Westinghouse LINT-PROOF screenless Motors doesn't stay.

Specially shaped rotor vanes circulate air through the motor at the proper velocity to remove lint.

All air passages are large.

All surfaces exposed to lint are glass-smooth.

There are no screens to require cleaning.

This Lint-proof motor has been designed without sacrificing a single feature that the ideal textile motor should have. For instance, taped end-windings with their superior insulating properties have been retained, but they are given a glass-smooth finish to which lint cannot adhere.

## Other Advantages

*High Efficiency*—Designed for minimum power consumption.

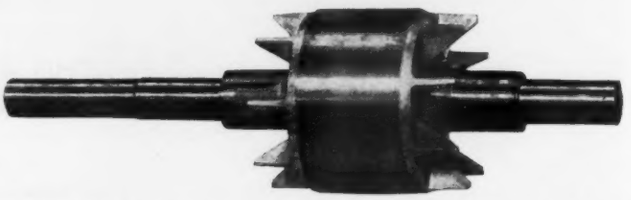
*Uniform Cooling*—The thin, smooth coating over the windings does not retain heat.

*Low Maintenance Bearings*—Oil-tight and dust-tight Sealed Sleeve or ball bearings can be supplied.

*Thermoguard Protection*—This new protective feature can be applied to Westinghouse Lint-proof motors.

Call or write the nearest Westinghouse office for additional information on these improved textile motors and control to match.

*Westinghouse Lint-proof Motors driving Spinning frames in a North Carolina Cotton Mill.*



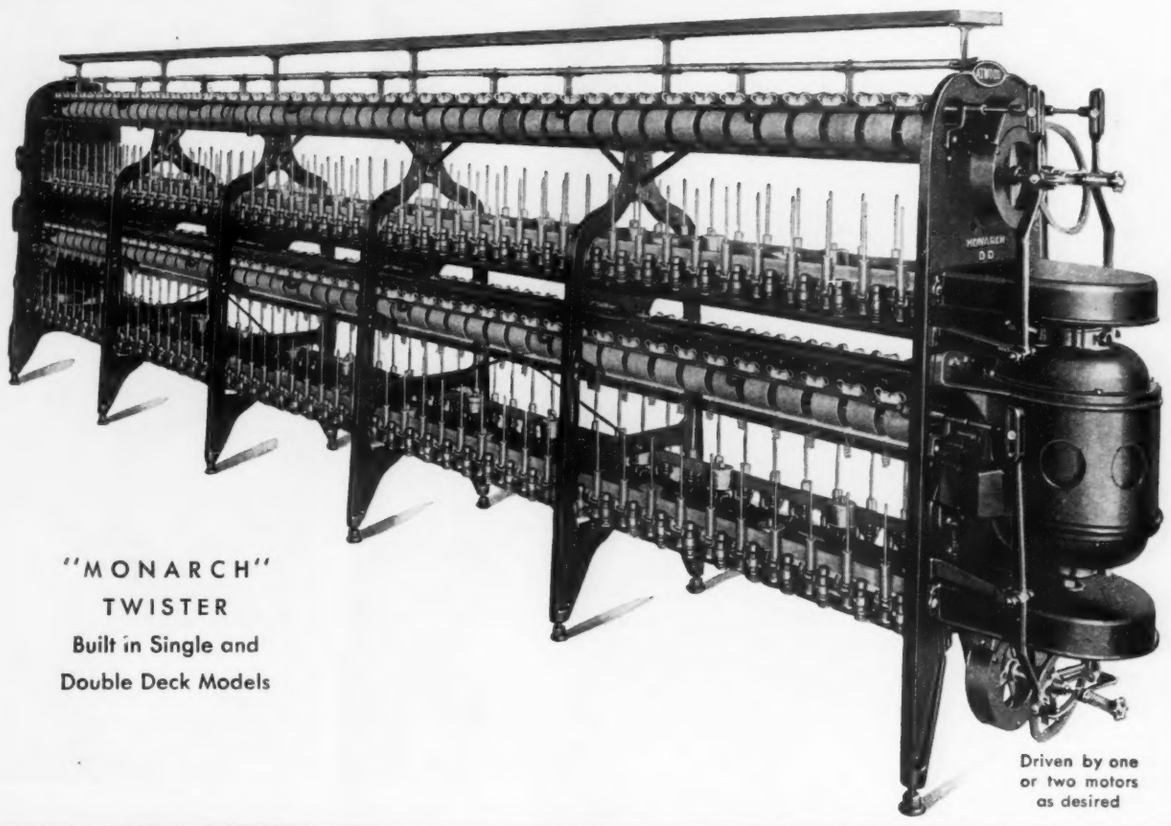
*Rotor of Lint-proof Motor. Note the die-cast blowers with tapered edges against which lint cannot pack.*

T 79637

**Westinghouse**

*Quality workmanship guarantees every Westinghouse product*

# For Rayon Twisting



"MONARCH"
TWISTER
Built in Single and
Double Deck Models

Driven by one
or two motors
as desired

ATWOOD
"BALL TOP"
SPINDLE

Standard equipment on the "Monarch"

Runs true and stays straight

Provides maximum supply of reserve oil.

ATWOOD

HIGH quality and low cost of twisting will be important features in the future production of rayon yarns. The first twisting of rayon by nearly every rayon manufacturer in America is done on Atwood Twisters.

Most of the subsequent twisting of rayon is also done on Atwood Twisters. The "Monarch" shown above, is the choice of leading mills for the twisting of rayon. Greater production, lower costs, complete grease protection, rugged construction, long life—these features spell quality and economy and account for the popularity of the "Monarch" for the twisting of rayon.

Rayon problems have always been Atwood's problems — continuously since the birth of the industry in America.

Bring your twisting problems to Atwood. Write today.

## THE ATWOOD MACHINE COMPANY

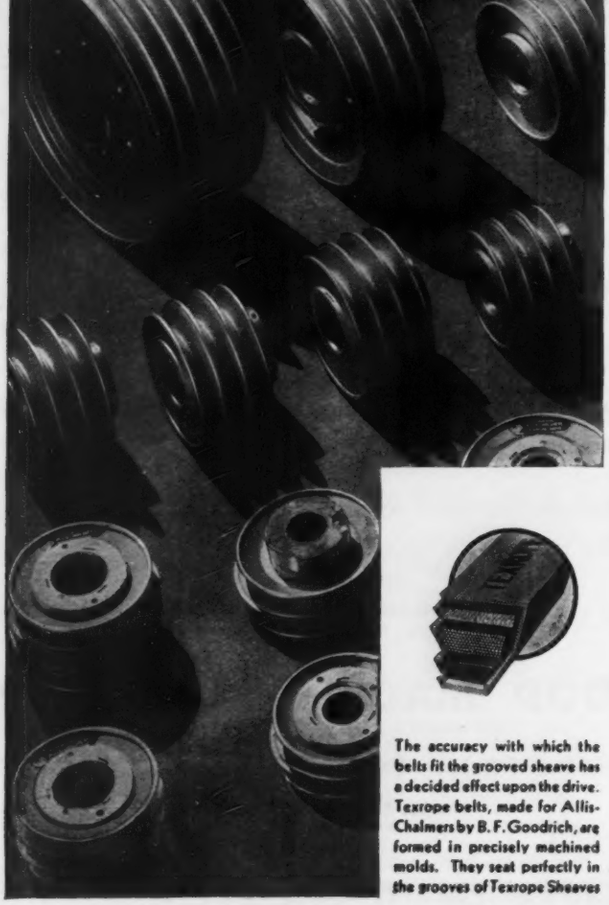
FOUNDED 1852

**STONINGTON, CONN., U. S. A.**

**Sales Offices: New York** **Wilkes Barre, Pa.** **Stonington, Conn.**
**Charlotte, N. C.** **Los Angeles, Calif.**

**ATWOOD MACHINES PRODUCE THE BULK OF AMERICA'S RAYON YARNS**

2091C





The accuracy with which the belts fit the grooved sheave has a decided effect upon the drive. Texrope belts, made for Allis-Chalmers by B. F. Goodrich, are formed in precisely machined molds. They seat perfectly in the grooves of Texrope Sheaves

# AVAILABLE ON DEMAND

Today's buyer—particularly of small motor drives—rightfully demands quick service and rush shipments, as well as a reliable product.

Texsteel, Texrope V-Belt Drives are available to industrials everywhere through distributors, thus providing immediate delivery of short center drives for speed ratios up to 7 to 1 and in ratings from ¼ to 15 H.P.

Texsteel sheaves are accurately formed of extremely tough steel, then welded and attractively finished in an aluminum lacquer. They are light in weight and low in cost. Combined with Texrope belts, they provide a drive that answers the modern demand for a low priced unit that will give thoroughly satisfactory performance.

We will gladly inform you as to your nearest source of supply on request.

ALLIS-CHALMERS MANUFACTURING COMPANY
TEXROPE DIVISION · · Milwaukee, Wis.

ORIGINATED BY ALLIS-CHALMERS
TEXROPE DRIVES

THE DRIVES THAT REVOLUTIONIZED TRANSMISSION PRACTICE · · ·

# MODERNIZING MILLS TO MINIMIZE MAINTENANCE!

● The rising activity in the textile field is gratifying indeed. With business on a come-back basis, it is now vitally important that every phase of maintenance be kept at consistent low levels.

Modernization in equipment will mean added profits. Modernization in production methods will add still further profits. A complete modernization of your lubrication program, however, offers you profit potentialities which are most dramatic when you stop to analyze this vital phase of possible profit leaks.

*Faulty lubrication can cause you more loss in breakdowns, repair bills and spoilage than any other one item in your production!*

That is why the leading mill operators have come to a complete modernization with Alemite Push Type Fittings from front door to back. They know by test that the relatively small outlay for installation is the finest investment in modernization that they can possibly make.

Aleminte Push Type Fittings PLUS Alemite Industrial Lubricants mean SAVINGS and EXTRA PROFITS any way you look at them.

LEARN THE WHOLE STORY—FREE AND WITHOUT OBLIGATION—MAIL COUPON TODAY!

ALEMITE CORPORATION (Division of Stewart-Warner) 761
1884 Diversey Parkway, Chicago, Ill.

Gentlemen:—I am interested in information leading to the reduction of costs through proper lubrication.

Name.....

Address.....

Company.....

City..... State.....

PIONEERS IN SPECIALIZED LUBRICATION FOR INDUSTRY

# No Substitute for Leather

"Once upon a time" when men first started to build machines they found that leather—good leather—was the only material with the strength, resiliency and durability necessary to drive them.

Today, with all the changes in design and methods, quality leather belting is still recognized as the most efficient medium for many important drives.

COCHECO Leather Belting—quality belting of the first order—is a steady favorite wherever leather belting is used. It is strong, resilient, durable—all that leather belting must be to give efficient and economical service.

*The "COCHECO Book on Belts" tells why COCHECO Belting deserves its reputation for quality. Why it is first choice in so many cases where leather belting is used.*

## I. B. Williams & Sons, Dover, New Hampshire

DETROIT CHICAGO GREENVILLE, S. C. NEW YORK PHILADELPHIA

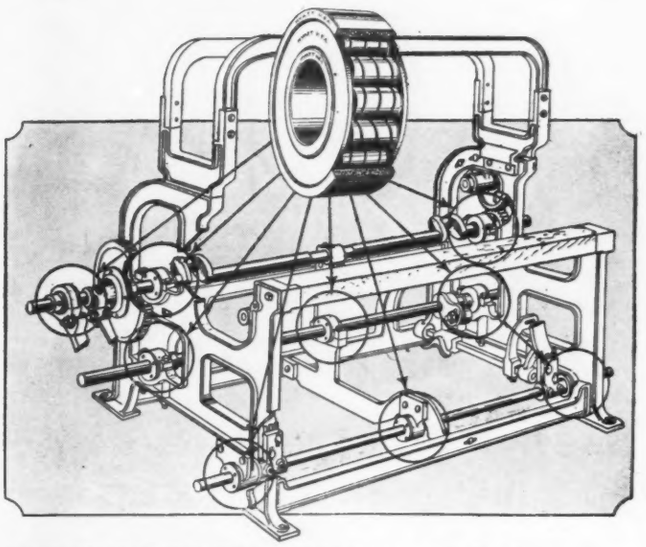
# The . . . SAVING GRACE of CERTAINTY

Making sure of bearing equipment in the beginning is the best promise of uncompromised satisfaction in the end.

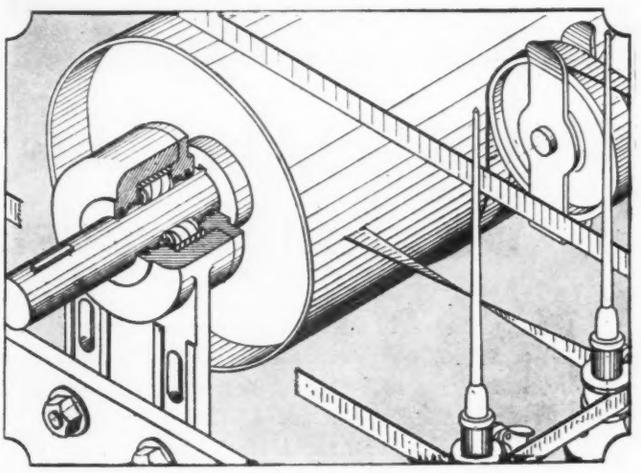
Hyatt Roller Bearings have demonstrated their worth. Everywhere they are standing up under the most severe shocks and loads. They are giving day-in-and-out dependable performance, never asking time off except for occasional lubrication.

The exceptional bearing performance which Hyatts deliver is the result of "controlled quality" wherein design, materials, and production are held to unusually high standards. Every step of Hyatt manufacture is subject to rigid supervision. All Hyatts are built to maintain the excellence of the machines or equipment they serve.

Certainly you prefer proved bearings. We assure you that Hyatts offer the greatest security and certainty. Hyatt Roller Bearing Company, Newark, Detroit, Chicago, Pittsburgh, Oakland.



IN THOUSANDS OF LOOMS—Hyatt Roller Bearings are saving power and lubricant, diminishing seconds, banishing wear, and reducing supply expense, maintenance and cost of production.

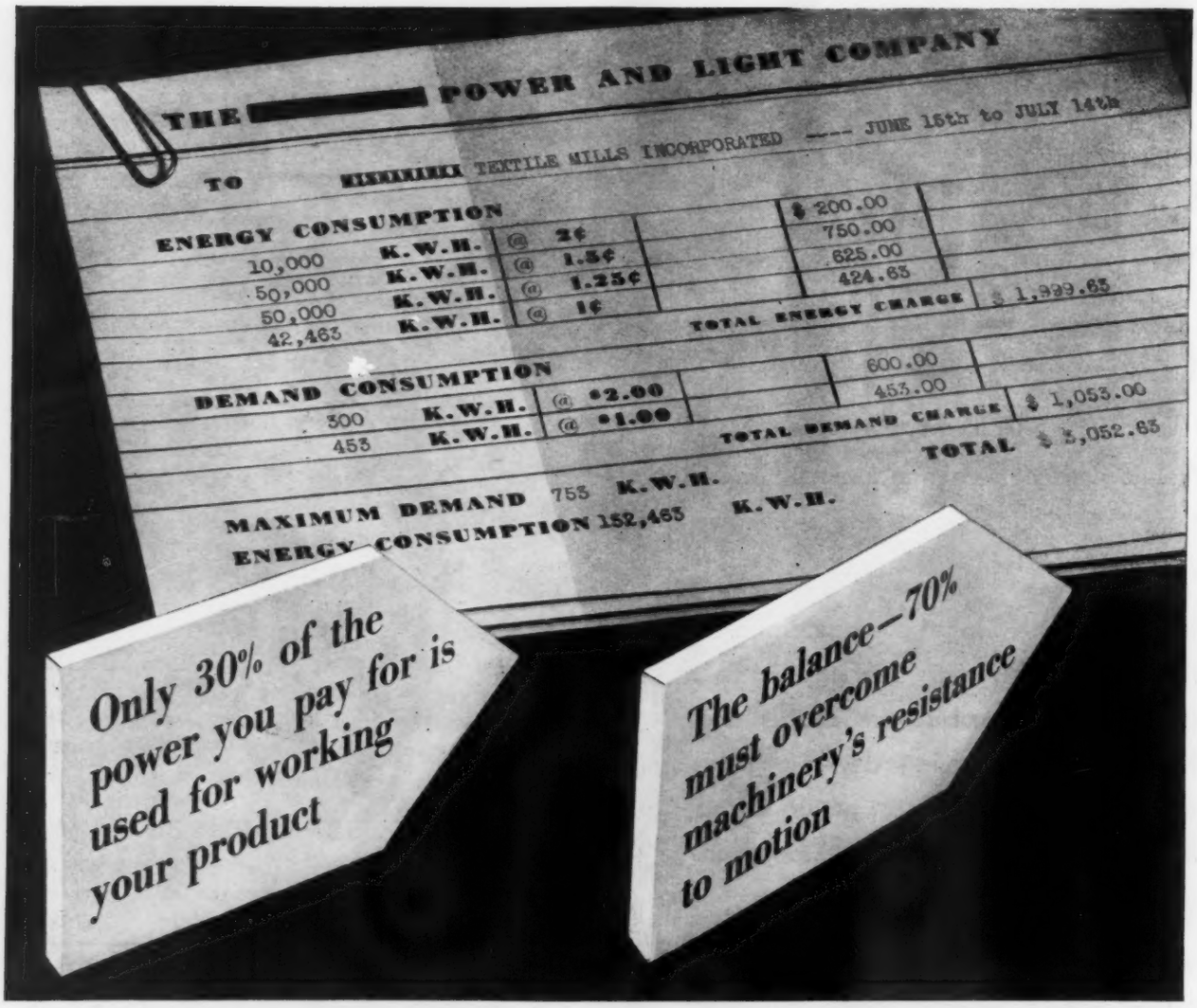


SPINNING FRAME CYLINDER ARBORS—when Hyatt-equipped run with less power, less vibration, less lubricant. No collars, no gadgets, nothing to get out of adjustment.

HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS


THE [redacted] POWER AND LIGHT COMPANY
TO [redacted] TEXTILE MILLS INCORPORATED ---- JUNE 15th to JULY 14th
ENERGY CONSUMPTION
10,000 K.W.H. @ 2¢ $ 200.00
50,000 K.W.H. @ 1.5¢ 750.00
50,000 K.W.H. @ 1.25¢ 625.00
42,463 K.W.H. @ 1¢ 424.63
TOTAL ENERGY CHARGE $ 1,999.63
DEMAND CONSUMPTION
300 K.W.H. @ $2.00 600.00
453 K.W.H. @ $1.00 453.00
TOTAL DEMAND CHARGE $ 1,053.00
TOTAL $ 3,052.63
MAXIMUM DEMAND 753 K.W.H.
ENERGY CONSUMPTION 152,463 K.W.H.
Only 30% of the power you pay for is used for working your product
The balance—70% must overcome machinery's resistance to motion

# Gargoyle Lubricants help leading mills reduce this resistance 5% to 10%

Let us consider a textile mill with an average monthly power bill of $5000. With ordinary lubricants in use, it is likely that in this mill $1500 buys enough power to work the product. The balance—$3500—*goes for power used to overcome machinery's inherent resistance to motion.*

Records of leading textile mills of every type show that Gargoyle Vactra X Oils and Gargoyle Velocite Oils, by providing proper film strength, reduce this frictional resistance as much as 10%.

Suppose that by the use and correct application of Gargoyle Lubricants in your mill you could cut your frictional power consumption, say, only 3%. Even at that conservative figure, the savings you would make *would more than pay your entire annual oil bill.*

Doesn't it seem well worth your while to let a Socony-Vacuum representative show you results of power tests made in equipment similar to your own—to suggest ways by which Gargoyle Lubricants can reduce power consumption in your mill?

GARGOYLE
Lubricating Oils

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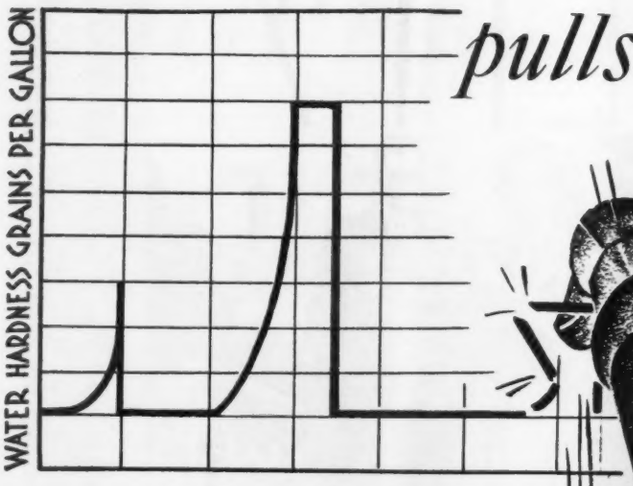


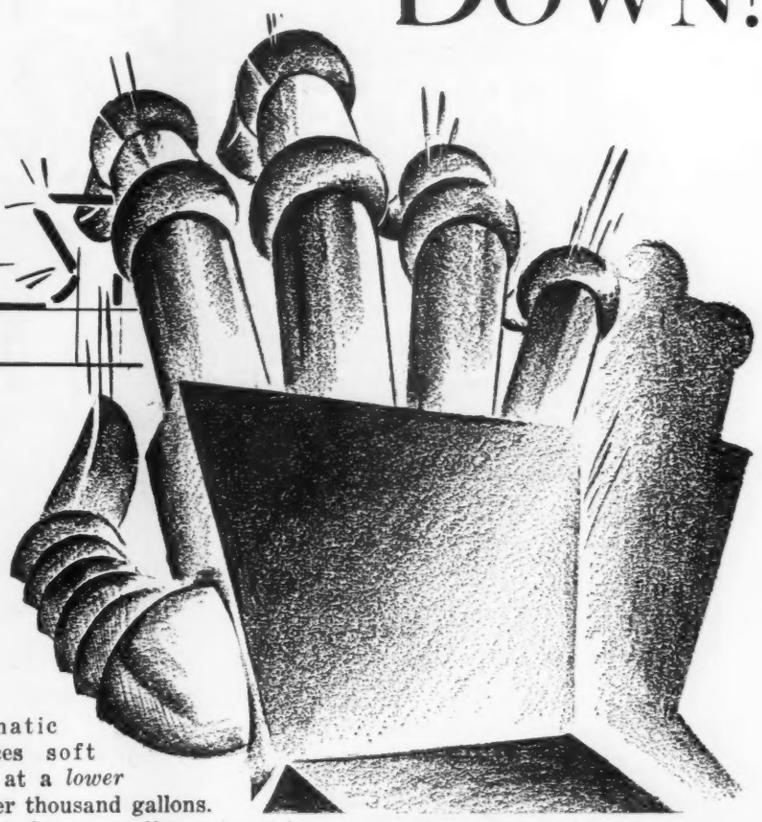

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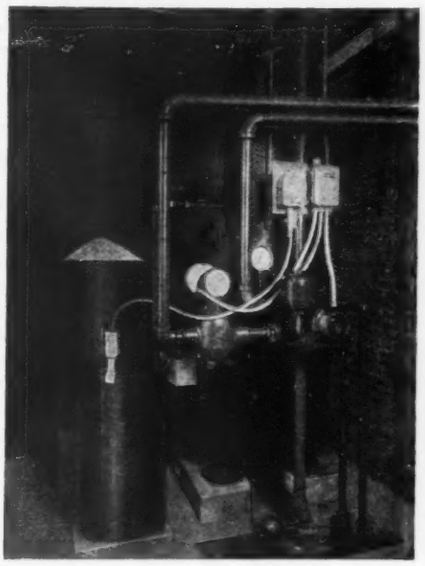

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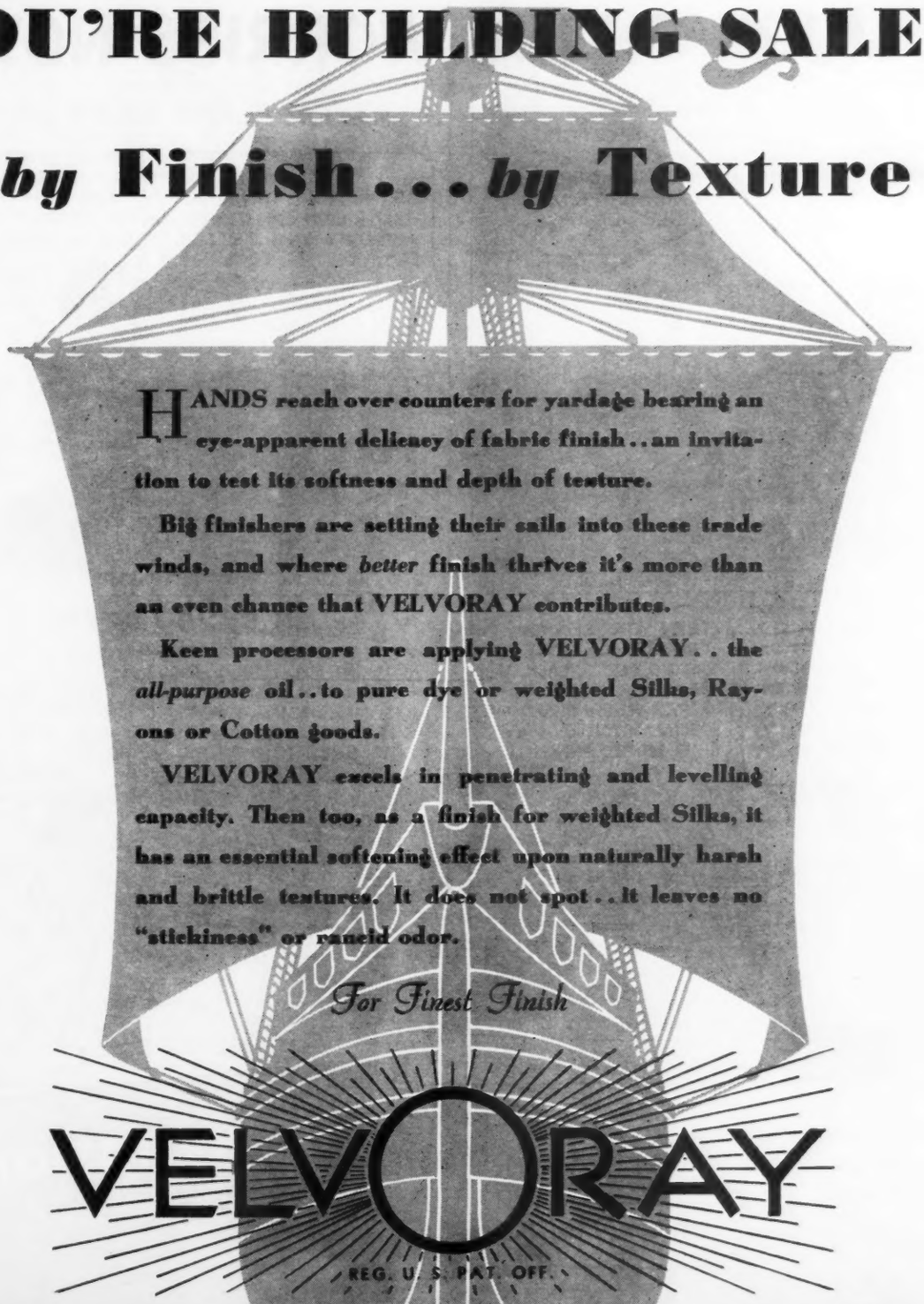

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Vol. 97 **COTTON** No. 8

August, 1933

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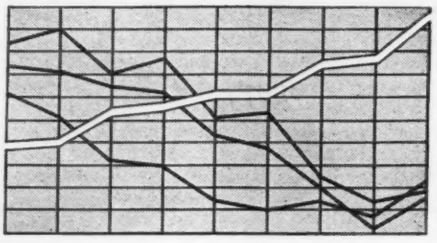

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Vol. 97
No. 8

COTTON

August,
1933

# The Textile Code Puts a Premium on Brains and Management

**THIS is where it always should have been. Price chiseling should now be a thing of the past. Hail to brains and management, a mighty good combination! . . . . .**

AMID all the confusion attendant upon the inauguration of the "New Deal" in the textile industry, one thing seems fairly certain: textile manufacturing is no longer to be run on the principle of a handicap race. Every mill management must toe the same mark, and the race should go to the fittest. The premium has been placed now on brains and management—where it should have always been.

The day of the cadger, the chiseler, should be over. The time when a few recalcitrant individualists—believing that anything is right if you can get away with it—can throw monkey wrenches into the works of a great industry, should be past.

The present depression, from which we all hope we are now emerging, was chiefly caused by overproduction—the first depression in history caused by having too much of everything. The textile industry was the first victim of overproduction. The fabulous profits made by mills in 1917 to 1921 encouraged too much new construction and too much development of night work. Since 1921, we have had a chronic condition of depression in textiles which has resulted in destructive competition practices that have almost completely taken the premium off of brains and management and placed it upon chiseling proficiency.

The man who could cut his wages the lowest, the man who could get the most work out of a given number of employees, who could run his machinery the longest without allowance for repairs and depreciation, was the pace setter for the industry. There was little incentive to real efficiency. One man might spend $100,000 for modern equipment that allowed him to produce more per employee, and to lower his costs while still paying fair wages. The chiseler, spending nothing to improve his operating conditions, cut his wages and forced his help to try to produce on obsolete equipment the same quantity of product made possible by the intelligent and courageous expenditure of money by capable management.

The goal of every management should be continued profitable operation. For the past decade we have seen production the objective of most managements rather than profit. Regardless of the volume of business done, there must be a profit. And in earning this profit, reasonable wages should be paid, and plants kept in good condition to perpetuate the possibilities of further profit. No industry is in a healthy condition unless it can pay its financial supporters a fair return on their investments, and its labor a fair wage for its work. What constitutes a fair wage for labor is a highly variable quantity, but it can be safely stated that when any considerable number of plants pay wages which are materially lower than the average of wages for the industry as a whole, then those plants are a menace to the stability of the industry. And if there is only enough business to justify running 80 hours a week, the plants that try to run 144 hours a week, and cut their prices to get the business to do it are also a menace to the industry.

Success in business should be built principally on quality of product, ability to serve the customer well, able management, and integrity. These fundamentals have been largely overlooked in the price cutting orgies of the past few years. Profits should be earned; not chiseled away from a competitor by unsound and unethical methods. Success should be deserved; not sneaked out of the help's pay envelopes and the mill's depreciation account.

These comments should not be construed as referring to individual men and individual plants in the majority of cases. The textile industry possesses its quota of scrupulous, progressive, fair-minded executives. The problem has been that, due to the set-up of the industry and its marketing, the proverbial bad apple could spoil all of the others in the basket.

Government is treading on dangerous ground, of course, when it attempts to manage industry. But it is on perfectly sound and solid ground in laying down reasonable and equitable rules to apply to industry for its own protection. To say how many looms a weaver can run, or how many spinning frames a spinner can tend, should not be the concern of government. In a good mill, well equipped, a good weaver or spinner can possibly run twice as many machines as a poor weaver or spinner in a poorly equipped mill. This is as it should be: the fruit of ability in management. It is

manifestly unfair to attempt to gear the entire force of operatives to the production of the least competent. But the government now should not only have the right, but also the duty, of forbidding the incompetent mill from paying half the wages, and working longer hours, than the good mill, to establish a price sufficiently lower than that of the good mill to enable the poorly equipped and managed mill to sell its inferior merchandise.

Some of our champions of individualism will say that this stifles initiative and individuality. It should not. It should encourage and stimulate it.

For Government to say that industry shall not cut its wages below a certain point; shall not work sufficient hours to increase production beyond the ability of the market to absorb it; shall not cut its prices below the known cost of production in order to chisel business away from a competitor—is not governmental meddling with business, but simply the official recognition of fundamental economic laws that any novice knows must be observed if stability and prosperity are to be maintained. A basic function of government is to curtail individual liberty when its extension trespasses upon the good of the people as a whole. Every law ever passed restricts the individual liberty of someone to do something in that light. As long as the restrictions are reasonable and sound and helpful, they should be welcomed by industry and individuals alike.

If industry co-operates fully with government to establish these simple but sound basic principles of operation, it should escape the menace of real governmental meddling with the intimate details of its operation. With a sound foundation to build upon, industry should be able to pull out of the mire by itself. Those units of industry which have no foundation of their own, and cannot build upon a new one, will likely be washed up by the New Deal, and the sooner they are washed up the better for all concerned.

While we are now trying to work out of a depression, we may still look far enough forward to visualize the responsibilities of government in case the present measures lead to a speculative inflation such as existed in textiles during 1920, and which would encourage an unwarranted expansion of the industry. Undoubtedly the government should be concerned with maintaining stability and not encouraging dangerous expansion which will result in a recurrence of the present difficulties. Should profits become unreasonably high in any industry, the government should certainly permit a sufficiently increased production schedule to balance the ratio of supply and demand, and maintain earnings at a fair level. Government has a dual responsibility, now that it has taken a hand in industrial regulation. It must see that business is not allowed to starve itself to death, nor permitted to gorge itself back into the hospital again.

# Textile Operating Under the Code

THE cotton-textile industry—joined simultaneously or subsequently by silk, rayon, thread and underwear manufacturers and others, under orders from President Roosevelt—began operating under the provisions of its code of fair competition on Monday morning, July 17th. The application of the code, under the National Industrial Recovery Act, wrought unprecedented fundamental changes in the industry's operating structure, its wage schedules, and other phases.

For purposes of record, it should be repeated here that the major provisions of the code, as approved by President Roosevelt, and put into effect on July 17th, provide for a maximum work week for operatives (with some exceptions) of 40 hours; for a maximum of 80 hours per week operation of production machinery (defined as spinning spindles and looms only); a minimum wage for operatives (with some exceptions) of $12 per week in the South and $13 per week in the North; and for the elimination of all operatives under 16 years of age from the mills of the country.

The code was applied under the terms of the National Recovery Act, passed by Congress to apply to the country's industries for a period of emergency designated by President Roosevelt as two years, for the purpose of spreading employment and restoring purchasing power in this country. The cotton-textile code was the first to be submitted under the Act, which calls for submission of such codes by all industry, and was the first to be approved by the President. A report of the code hearings at Washington the latter part of June, with brief reference to the President's executive order putting it into effect, appeared in these columns in the July issue. Up to the time of this writing (late July) the code as it was published on page 22 of the June issue of COTTON has been unchanged, there having been, however, some modification of the President's orders, which will be unofficially commented upon here.

The transition of the cotton mills of the country from a condition of inequalities in working hours for operatives and machinery, between one section, state, and mill and another, was of course the most momentous development in the history of the industry as a whole. Never before has there been any development applied to the entire industry alike with such rapidity and general effect. The conditions of the code, however, were apparently applied universally with little confusion, when the magnitude of the undertaking and its application to so many hundred individual plants, with such speed and with so little authoritative interpretation available at the time, are considered.

The general and eventual effects of the new order cannot be definitely forecast. There is at this writing, however, much feeling that unless provision is made for gearing the remainder of the country's industry up to the New Deal, to correspond to the textile code, that there is to be a lag between the production of textile goods under the increased costs of the code's provisions and the consumption of these products that will prove detrimental to the purposes of the Act. As this is written, the President has just issued the

terms of a voluntary code of operation, applicable to all industry, which, the administration hopes, will be adopted in a sufficiently general way to speed the program of increasing employment and raising purchasing power.

It is most interesting to be an observer in the application of the code. That there should be misunderstandings and lack of definite knowledge as to detail, even among those most intimately associated with the drafting of the code, is natural when it is realized that less than three weeks' time elapsed between the time the final code, as published in our July issue, was submitted (June 30), and the date of its application, July 17th; and that one week exactly elapsed from the announcement of the President's approval of the code (July 9th) to the date of its application.

In its fundamental provisions, however, it is believed that the code was universally applied on the date established by the code itself. Minor changes, modifications, re-arrangements, etc., are, naturally, the result of such speed in application, and are being straightened out from day to day. The cotton-textile industry committee, the authorized representatives of the industry, have continued their work through subsequent conferences with the Recovery Administration in Washington, and continue to do yeoman service in determining the finer points of the code's application.

### The President's Provisions

On July 16th, President Roosevelt approved recommendations of the cotton-textile industry committee modifying some of the provisions of the executive order issued with his approval of the code.

One important alteration was that, whereas in his conditional approval on July 9th, the President had limited it to a four months' period, on the 16th he acceded to an application of the cotton textile industry committee to withdraw this stipulation. A summary of the provisions of the President's order accompanying his acceptance of the code, incorporating the modifications made on July 16th, follows:

It shall be one of the functions of the planning and fair practice agency provided for in Section 6 of the code to consider the question of plans for eventual employee ownership of homes in mill villages and submit to the recovery administration prior to January 1, 1934.

On and after July 31, 1933, the maximum hours of labor for office employees in the cotton textile industry shall be an average of 40 hours a week over each period of six months.

The amount of differences existing prior to July 17, 1933, between the wage rates paid various classes of employees (receiving more than the established minimum wage) shall not be decreased—in no event, however, shall any employer pay any employee a wage rate which will yield a less wage for a work week of 40 hours than such employee was receiving for the same class of work for the longer week of 48 hours or more prevailing prior to July 17, 1933. It shall be a function of the planning and fair practice agency to observe the operation of these provisions and recommend such further provisions as experience may indicate to be appropriate to effectuate their purposes.

On and after July 17, the maximum hours of labor of repair shop crews, engineers, electricians and watching crews shall, except in case of emergency work, be 40 hours a week with a tolerance of 10 per cent. Any emergency time in any mill shall be reported monthly to the planning and fair practice agency.

Until adoption of further provisions of the code that may prove necessary to prevent any improper speeding up of work (stretch-outs), no employee of any mill in the cotton textile industry shall be required to do any work in excess of the practices as to the class of work of such employee prevailing on July 1, 1933, or prior to the share-the-work movement, unless such increase is submitted to and approved by the agency created by the code.

The code is in operation as to the whole cotton-textile industry except as an exemption from or a stay of the application of its provisions may be granted by the administrator to a person applying for the same or except as provided in an executive order. No distinction shall be made in such exemptions between persons who have and have not joined in applying for the approval of the code.

The foregoing modifications requested by the industry committee were accepted on July 16th by the President covering paragraphs in his July 9th order. Other paragraphs in the President's original order, which were accepted by the industry committee, follow:

(1) Limitations on the use of productive machinery shall not apply to production of tire yarns or fabrics for rubber tires for a period of three weeks after this date (July 9).

(3) Approval of the minimum wages proposed by the code is not to be regarded as approval of their economic sufficiency, but is granted in the belief that, in view of the large increase in wage payments provided by the code, any higher minima at this time might react to reduce consumption and employment, and on the understanding that if and as conditions improve the subject may be reopened with a view to increasing them.

(7) While the exception of cleaners and outside workers is approved for the present, it is on condition that the planning and supervisory committee provided by Section 6 prepare and submit to the administration, by January 1, 1934, a schedule of minimum wages and of maximum hours for these classes.

(8) It is interpreted that the provisions for maximum hours establish a maximum hours of labor per week for every employee covered, so that under no circumstances will such an employee be employed or permitted to work for one or more employers in the industry in the aggregate in excess of the prescribed number of hours in a single week.

(9) It is interpreted that the provisions for a minimum wage in this code establish a guaranteed minimum rate of pay per hour of employment regardless of whether the employee's compensation is otherwise based on a time rate or upon a piece work performance. This is to avoid frustration of the purpose of the code by changing from hour to piece work rules.

(13) Section 6 of the code is approved on condition

## Sloan Refutes Implications of Profiteering

**George A. Sloan, president of the Cotton-Textile Institute, said on July 18:**

**"The great bulk of all cotton goods and yarns sold since July 1st was for future delivery. Now that the Code of Fair Competition for the Cotton Textile Industry has become effective, these goods are being manufactured on schedules calling for reduction in the work week from 60 hours, 55, 54 and 48 to 40 hours and under higher wage conditions. Naturally the shorter hours and higher wages are causing an unprecedented increase in cost of manufacture over and above that which existed at the time these contracts were made.**

**"According to the best cost engineering advice today's prices of cotton goods do not reflect a profit under present operating conditions and without any consideration of the proposed processing tax to become effective August 1st.**

**"I am convinced that there is nothing approaching profiteering in this industry. Not one cotton mill in a hundred was selling its product at cost of production last March. Obviously the cotton mills throughout the country are obliged to add to their new quotations not only the increased cost due to shorter hours and higher wages under the code, just approved by the President, but an added increase in cost to stop industry-wide losses. A cursory examination of any reliable statistics covering cotton mill earnings over the past year or four years will serve to refute any suggestion of excessive prices."**

that the administration be permitted to name three members of the planning and supervisory committee of the industry. Such members shall have no vote but in all other respects shall be members of such planning and supervisory committee.

### General Comments

Even upon the eve of the date of applying the code to the industry, there were clarifications of some of the provisions of the President's order accompanying it yet to be made, and there will doubtless arise from week to week numerous contingencies which must be authoritatively interpreted. It is therefore unwise and unreasonable to attempt, in a comment here on the code and its application, any interpretations beyond the stated provisions of the code itself, as it has been made available to the industry.

This is being written immediately following the first week of the industry's operations under the code, and it will naturally take some time for conditions to permit anything approaching a comprehensive survey of details of management. From the standpoint of the industry generally, however, it is evident that the establishment of a maximum of 40 hours a week for operatives, and 80 hours a week for machinery is resulting in a shifting of operations which will produce higher productive operation in New England, where some 4,000,000 spindles were reported idle a couple of months ago. At the same time, there were reported 2,000,000 spindles idle in the South. It is unofficially estimated that under the new schedule, additional production equivalent to 8,000,000 more active spindles on a 40-hour week will be required to produce the average requirements of the past twelve years for cotton goods.

This result could be achieved either through idle mills starting up, Eastern mills going on more regular operation, or southern mills going from single to double shift. No doubt the final result will be a combination of all of these factors. In May of this year, those mills which were operating in New England averaged 34 hours of operation per week. Many of the southern mills which have been operating only one shift of 55 hours or 60 hours a week will undoubtedly go to double shift. Then there are the 2,000,000 idle spindles in the South and the 4,000,000 idle spindles in New England, some of which will be operated under the new arrangement. All of these statements, at the moment, are conjectures, at the best, and time will be required for the correct and complete picture to reveal itself. This is another instance where definite statements are decidedly premature and unauthenticated.

Hasty inquiry reveals that a large proportion of the mills, in the southern section—where double-shift operation under the code is predominant—started under the code on a schedule of 6:00 A.M. to 2:00 P.M., when on single shift, and on these hours for the first shift of double-shift operations, with the second shift running from 2:00 P.M., to 10:00 P.M. There are, of course, many exceptions, some single-shift mills starting at 6:00 A.M., with an hour for "dinner", and stopping at 3:00 P.M.; others starting at 7:00 A.M., and stopping at 4:00 P.M., with a dinner hour; and many other variations. In many of the mills running straight-through, without stop for meal time, the management is permitting and providing for lunch and drink counters and, more often, lunch and drink carts for serving light refreshments to the operatives at intervals. On this point it is again necessary to be broad, and impossible to be specific—time, experiment, and practice alone will determine the details of the schedule of hours.

The establishment of a minimum wage, and the maintaining of the amounts of differences in higher-paid classes of workers in line with the President's provision, and the reduction in operating time on single and double-shift operation, naturally added tremendously to the production cost of cotton fabrics. This result created in the markets a state of confusion and uncertainty as to prices, with committees from the selling houses and the cotton-textile merchants association endeavoring at this writing to formulate some standard acceptable basis of price differential to apply under the new production conditions.

As was true in most of the details of the code's application, the matter of wage rate increases to conform to the code, the determination of bases in the matter of applying the increases on the different jobs, was left entirely to the discretion of the individual mill. Here again there was great variance as to method and result—but generally it is felt that the mills conformed strictly to the spirit of the president's order as well as to the letter, in the establishment of rates for the various classes of labor. There is at this writing much uncertainty as to possibilities of rearrangement of jobs—such as in the spinning room. Where a mill has spinners not capable of handling in its entirety a job corresponding on the rate paid to the minimum wage, the possibility of re-arranging the work, by making cleaners of these operatives, enlarging the number of sides handled by the more efficient spinners—without increasing the work load of any—has been raised as a typical example of effecting efficient operation while conforming strictly to the spirit of the code and the President's order. In such cases, however, most mills seem to prefer to await an official interpretation before taking definite steps along this line.

### The 'Stretch-Out" Report

One paragraph of the President's order specified that no job should be increased beyond the conditions existing on July 1st, or prior to the share-the-work movement, unless such increase was approved by the established agency. This was generally interpreted to provide temporarily for the "stretch-out" investigation until the report of the committee on this subject was made. The committee—composed of Ben E. Geer, of Greenville, S. C., representing the industry; Robert W. Bruere, of Columbia University, representing the consumer; and George L. Berry, of Clarkesville, Tenn., representing labor—made an investigation of the so-called "stretch-out" system, whereby the number of machines tended by an operative is increased through the use of assistants, improvement of equipment and material, etc. They conducted several hearings and submitted a report to the recovery administration. the details of which had not been an-

nounced at the time of this writing.

In connection with this investigation, the Cotton Manufacturers Association of South Carolina prepared an excellent brief reviewing the true history of the "stretch-out" system and its application, its use in other industries, and an explanation of its true workings. Apart from the action of the committee in relation to the code, this document is an exceptionally interesting and valuable discussion of the subject of labor extension or efficiency. (It is reproduced in large part on page 45 of this issue. See also page 47 for report of "police" and industrial relations committees appointed August 2nd by General Johnson.)

### Labor Organization

Since the passage of the National Recovery Act under which the cotton-textile code was formulated, adopted and approved, there has been much discussion pro and con of the provision, incorporated in the code, "That employees shall have the right to organize and bargain collectively through representatives of their own choosing; * * * that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; * * *"

This creates a condition in the industry, particularly in the southern territory, of the advent of labor unions in the textile industry, that is new and full of complications. In this connection, therefore, a statement of General Johnson, administrator of the recovery act, is of pertinence. He said, on July 7:

"Circulars and other literature purporting to come from labor union agents have intimated or openly stated that it is a purpose of the National Recovery Act and Administration to unionize labor or that the only way labor can secure benefits under that Act is to join this or that Union.

"Similar statements purporting to come from industrial concerns have intimated that this or that newly formed company union is the only organization through which labor can get a fair deal under this Act.

"Both statements are incorrect and such erroneous statements of the Act and its Administration tend to foment misunderstanding and discord.

"It is the duty of this Administration to see that all labor—organized as well as unorganized—gets a square deal, and the Administration is organized to do and will do that duty. The improved labor conditions proposed in the textile industry, which is largely unorganized, are an example of this. It is not the duty of the Administration to act as an agent to unionize labor in any industry, and, as has repeatedly been stated, it will not so act. It is the duty of this Administration to require the inclusion in codes of the mandatory conditions of Section 7 (of the Recovery Act) and to see that these conditions are complied with, and it will perform that duty. * * *

"Manifestly, the purpose of the Act is to create and preserve harmonious relationships and to prevent industrial strife and class conflicts.

"Labor in any industry has the right to organize and bargain collectively; the law also recognizes the right of individual workers to bargain for their own conditions of employment. But in the execution of this new social policy to which the government stands committed, it is the obligation of the National Recovery Administration to require the payment of living wages by industry as a condition of continued existence and to prevent excessive and unreasonable disparities, in the interest both of social justice and of a balanced economy.

"Collective bargaining under adequate Government sanction and supervision should hold no fears for the fair-minded industrialist; on the other hand, the National Recovery Administration pledges itself—through its Labor Advisory Board to obtain a fair deal for labor in any industry presenting a code, whether the employees are organized or not. It is not the function or the purpose of the Administrator to organize either industry or labor. * * *

"Throughout industry, the change from starvation wages and starvation employment to living wages and sustained employment can, in large part, be made by an industrial covenant to which all employers shall subscribe. It is greatly to their interest to do this because decent living, widely spread among our 125,000,000 people, eventually means the opening up to industry of the richest market which the world has known. It is the only way to utilize the so-called excess capacity of our industrial plants. This is the principle that makes this one of the most important laws that ever came from Congress because, before the passage of this act, no such industrial covenant was possible.

Underwood & Underwood

Gen. Johnson

"On this idea, the first part of the act proposes to our industry a great spontaneous co-operation to put millions of men back in their regular jobs this summer. The idea is simply for employers to hire more men to do the existing work by reducing the work-hours of each man's week and at the same time paying a living wage for the shorter week * * *

"It is a challenge to industry which has long insisted that, given the right to act in unison, it could do much for the general good which has hitherto been unlawful. From today it has that right * * *

"This law is also a challenge to labor. Workers, too, are here given a new charter of rights long sought and hitherto denied. But they know that the first move expected by the Nation is a great co-operation of all employers, by one single mass action, to improve the case of workers on a scale never attempted in any nation. Industries can do this only if they have the support of the whole public and especially of their own workers. * * *

"If we ask our trade groups to do that which exposes their business, as never before, to undermining by members who are unwilling to do their parts, we must guard those who play the game for the general good against those who may seek selfish gains from the unselfishness of others. We must protect them from the racketeers who invade organizations of both employers and workers * * *."

### Sloan's Statement

Under date of July 17, George A. Sloan, president of the Cotton-Textile Institute and chairman of the cotton textile industry committee which formulated the code, issued the following statement:

"Someone had to pioneer. Some industry had to translate theory into action, to turn the mere potentialities of the Recovery Act for meeting a dire national emergency into actualities. The cotton textile industry code, the first under the National Industry Recovery Act, goes into operation today.

"That Act was passed to make it possible to break a vicious downward spiral in which the life of the nation was caught; a sucking whirlpool from which no individual enterprise, indeed no individual industry was strong enough to swim out. The pressure of overcapacity in every industry due to the progressive drop in consumption was forcing every individual enterprise to try to get a large enough share

of the wholly inadequate demand to enable it to hold down overhead. The necessity to keep going forced successive cuts in prices and wages in the mad scramble to keep head above water. No one could stand out against this pressure toward a course of action that was nevertheless collectively disastrous to the industry and the nation. Cut-throat prices, cut-throat wages were eating up working capital, withering the whole credit structure of the nation, laying the blight of unemployment on home after home.

"The Recovery Act makes it possible to check this rout, whipped on by the cut-throat competition forced by overcapacity, by temporarily limiting the capacity of an industry *as a whole* to what the demand as a whole will absorb. It makes possible a unified advance by an industry and all industries on a broad front to restore purchasing power and credit by spreading employment and restoring wages and prices.

"The very passage of this Act, with its potentialities, went far to restore immediate hope and confidence. It stimulated buying and the re-stocking at the abnormally low prices by indicating that the bottom in price had been reached and that an advance both in price and purchasing power, through the operation of the Act, was to be expected. But it would be a fatal mistake to let speculative profits in the stock and commodity markets make us return to the psychology of 1929. The real problem of restoring consumer purchasing power and wiping out unemployment lies ahead. It isn't enough to have the Act. Industry must actually work under the Act to end the emergency. Someone must pioneer.

George A. Sloan

"The cotton textile industry gave broad powers to a committee to work otu a plan. It was fortunate in having as its representatives a group of men representative of every branch of the industry who put all personal considerations and interests aside and worked out a plan in co-operation with the Recovery Administration with a single eye to the welfare of the industry as a whole and the contribution which it could make to the general welfare in this time of national emergency. The committee was able to reach a result because of the broad confidence and support it received from stockholders, management and employees of the mills in presenting a Code under the Act, promotive of their interests and that of the public.

"The cotton textile industry has thus taken its courage in its hands. It has blocked out a plan of operation on its sector of the industrial front and today putting that plan into effect advances as the spearhead of the attack under the Act. Its plan should result in putting an additional 100,000 employees to work. Through this additional payroll and minimum wage rates and through adjustments the industry will make a marked contribution to an increase in general consumer purchasing power. All this together with reduced weekly hours of employees to aid in reducing unemployment means a heavy increase in our costs.

"Such a far-reaching, bold plan inevitably involves tremendously difficult immediate problems of adjustment to every unit in the industry. It is not merely a matter of convenience, it is a matter of immediate hardship in one form or another to practically every unit. Too much cannot be said for the spirit in which these hardships, which from the nature of the case as in war time, can not be distributed with anything like exact equality, are being undertaken. It is this industry's contribution toward meeting the emergency and securing a return of general welfare to all."

### The Cotton Processing Tax

SECRETARY of Agriculture Henry A. Wallace, under the provisions of the Agricultural Adjustment Act, ordered on July 14 a processing tax on raw cotton and manufactured cotton products, to be effective August 1. The order was immediately approved by the President.

The tax was applied in conjunction with the government's program of leasing a portion of the cotton acreage to the Department of Agriculture under the terms of the Agricultural Adjustment Act. During the latter part of June, a campaign was staged for the signing of contracts by individual farmers to lease a definite amount of their cotton acreage to the Secretary of Agriculture. The consideration offered to the cotton producer for his land was contained in two alternative plans:

(1) A cash payment in consideration of co-operation, based on the productivity of the land, and ranging from $6 per acre for land yielding on the average around 100 pounds of lint cotton per acre, to $12 for land yielding on the average 275 pounds or more per acre, plus an option on government-held cotton in an amount equal to that which the producer agrees to retire from production, and at a price of 6 cents per pound.

(2) A cash benefit without the cotton option, the amount of such benefit on a per acre basis, to range from $7 for land yielding from 100-124 pounds per acre to $20 for land yielding 275 pounds or more per acre.

On July 14th, Secretary Wallace announced the success of the cotton acreage reduction campaign, stating that it would result in the elimination from production of more than 10,000,000 acres of cotton land, reducing the present crop approximately 3,500,000 bales.

The processing tax, which is assessed to pay the cost of the cotton reduction plan, is 4.2 cents per pound on raw cotton net weight. The Act provides that this tax will terminate at the end of the marketing year current at the time the Secretary proclaims that rental or benefit payments are to be discontinued with respect to cotton. The rate of 4.2 cents a pound will remain in effect unless the Secretary finds it necessary to adjust the rate. This tax, which will be collected by the Bureau of Internal Revenue, is on the first domestic processing of all cotton processed on and after August 1. It will be necessary for all manufacturers and other first processors of cotton to furnish the Bureau of Internal Revenue with satisfactory inventory statements as of August 1 and monthly reports showing the amount of cotton processed. The Act exempts from this tax the ginning of cotton and the processing of cotton linters.

A conversion factor is prescribed for applying a tax to floor stocks and a compensatory duty to imports of cotton products, and refunds which are to be paid under certain provisions of the Act. This conversion factor fixes a rate for cotton products, equal to 105.2 per cent of the processing tax and makes allowance for non-spinnable waste removed in the course of processing. (Non-spinnable waste is defined as including only opener, breaker and finisher picker waste, card motes and fly, sweepings, and clearer waste, and the products thereof). This conversion factor makes the tax on floor stocks 4.4184 cents per pound.

A tax is to be paid on floor stocks of cotton products held by manufacturers, wholesalers, and others, on August 1. These stocks include the stocks of retailers which are not disposed of within 30 days after August 1. All warehouse stocks, whether of retailers or wholesalers, are to be taxed, whether disposed of within 30 days or not.

# Practical Rayon Handling in the WEAVING MILL—Part Two

By Phil A. Ment

THIS is the second of a series of articles on this subject, the first having appeared in the June issue. The author has agreed to prepare a subsequent discussion, which will appear later. This will cover particularly the sizing and weaving of rayon goods, referring to size formulae, the changes in cloth resulting from variations in sizes and improper application of size mixtures, and individual loom adjustments on crepes, taffetas, linings, etc.

## Sizing

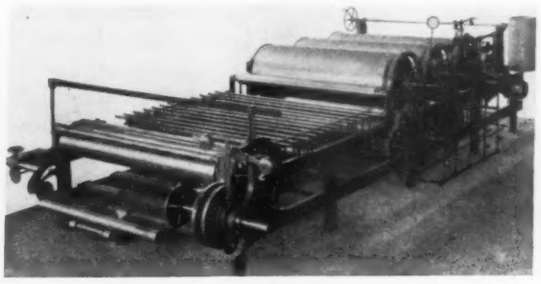
THE sizing of rayon warps is one stage of the process where the requirements of the finisher play a very important part. Coupled with these are the preferences and practices of the rayon producers, and the opinions and judgment of the manufacturer. Especially is this true in the selection of sizing materials. So, it is probably best to skip this part and deal rather with a few of the mechanical aspects.

The amount of stretch given the yarn on the sizing machines should be carefully and accurately regulated. On the latest types of frames, it is possible to size warps at practically zero tension. For best results the amount should not exceed 5 per cent on viscose, and 3-3½ per cent on acetate. Yardage clocks placed at the front and back of the frame furnish an accurate method of determining the amount of stretch.

It is now quite common practice to size rayons on the cotton slasher, using one or both cylinders, with very satisfactory results. Upwards of 4,000 ends of 150 denier are being run regularly in several mills. Drying temperatures are best regulated by experiment. It is well, however, to limit the temperature of the drying cans to 220 degrees F. on viscose yarns and as low as possible on acetate yarns. Running speeds depend on the amount of size absorbed, and should be settled upon by experiment.

In setting up this latter type frame for viscose, it is best to avoid using the immersion roll and simply run the yarn under a single squeeze roll, as this type rayon absorbs the size solution very readily. Conversely, acetate yarn should run in the size box, as this yarn is moisture resistant. The size box should be moved as close as possible to the cylinder, reducing to a minimum the distance from the squeeze roll to that part of the hot cylinder that first contacts the wet yarn. The reason for this is obvious. All the pull of the cylinder is exerted on *wet* yarn, and the liability of stretching is very great.

Frequent tests should be made on the sized warp, to ascertain the amount of stretch *left in* the yarn. Data should be taken at the start, middle, and toward the ends of the set in order to see if proper regulation of tension is being maintained. There should be not less than 15 per cent stretch, or extensibility, left. For this determination, a single strand yarn tester should be used and at least 20 readings taken.



Courtesy, Charles B. Johnson
A Rayon Sizer or Slasher

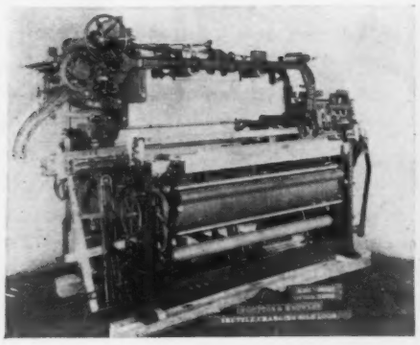
## Weaving

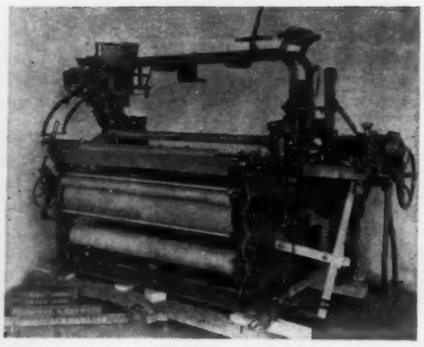
Assuming that uniform, correct, and carefully prepared warps are delivered to the looms, the weaving should not offer any especial difficulty. A good room condition must be maintained at the figure giving the best running work. If viscose, acetate and cotton are all run in the same room, some point will have to be reached that gives the best general result on all fibers. To attempt variations over a room is dangerous, and impractical.

It is obvious that with the latest type looms there is no excuse for poor work, barring faulty operation. But in adapting cotton looms to rayon, a variety of problems is met. Perhaps it is best to list some of these and discuss them separately.

### Steadiness

The latest type of silk and rayon looms are especially designed to give a smooth, uniform motion to every working part. These properties should be simulated in cotton looms, at every possible point. The frame should be lined and leveled, and lock washers placed behind nuts to insure permanent tightening. Lays should be lined and leveled carefully, using the same type reed that will be used on the warp. The race plates should be covered with a strip of billiard cloth, corduroy, or close woven flannel. Worn parts should be replaced, and extra care used in fitting. Take-up rolls should be covered with fine sandpaper, or some other type of covering that will not injure the woven cloth, or allow the cloth to slip. A crepe rubber compound, now on the market in strip form, is very good in these





Courtesy, Crompton & Knowles Loom Works

Two styles of looms used for rayon weaving

respects. All lost motion should be worked out, and all oil holes should be cleaned and inspected for proper lubrication.

### Take-Up Motion

The high roll take-up motion is preferred, and if possible, the roll should be changed to this position. Ratchet gear motions give better results than worm drives, although the worm drive serves well enough on some fabrics.

### Let-Off Motion

Both the ratchet gear and friction types have been used, but the preference seems to be in favor of the friction type, which appears in a variety of forms. Some weavers prefer a dry chain wound around the head; some dust the chain with graphite or chalk, others use oil, and still others smear on a paste made from grease and graphite. Cotton rope is widely used in place of the chain. Bale tie strapping faced with leather, and the leather dusted with graphite, makes another good type.

The idea is to get a smooth even motion that does not tend to get sticky and jump, regardless of type. Otherwise uneven cloth results.

### Pick Motion

If the loom is equipped with the bat-wing type pick motion, so much the better. This snaps the shuttle across quickly, with the shed full open, which is advantageous. The shuttle should not enter the shed too early, as this has a tendency to chafe the yarn. Looms with the ball and point motion should be set to pick a little late, thereby accomplishing somewhat the same effect as a bat wing motion. Light picking is desirable, and should be worked toward.

### Checking

The shuttle box should be thoroughly cleaned, and set to give a positive check to the shuttle; otherwise kinky filling results, especially in voiles and crepes.

### Harness

Heddles should be carefully divided at the ribs. The shed should be carefully set, with as little opening as will permit proper passage of the shuttle. Heddle makers furnish a "silk finish" eye that is well worth the cost.

When looms are stopped at night or over the week-end, it is well to level the harness. A certain type starting mark, in the cloth, is thereby prevented.

### Shuttles

All types of shuttles are being used today on rayon. A good loom fixer can, by ingenious use of animal fur and felt cloth, run the regular or the higher twisted yarns in the shuttles he has at hand. Filling changing from batteries, even on rather highly twisted yarns, is possible largely due to proper frictions in the shuttle and shuttle eye.

A little care and judgment must be used by loom fixers in the use of fur and cloth for extra frictions. Small strips, about ⅝-inch wide and about 4½-inch long, placed one to each side of the shuttle, will give all the friction necessary. It is best to run the yarn *against* the natural lay of the fur, clipping the hair fairly close so that the yarn as it is drawn from the quill contacts with the tips of the hair. A little trial and practice will soon bring out the proper procedure. There are no end of uses of felt cloth in the shuttle eyes, and any fixer can find numbers of suitable methods with a little practice.

### Quills (Cops).

While the common cotton quill is used to a great extent, weavers are finding the silk quill to be much more desirable. The slender construction cuts down the natural "ballooning" tendency of the yarn and offers less friction surface.

The care of quills is a vital factor that is frequently neglected. Surplus yarn should be pulled off by hand and not by a machine or cut off with a knife. Machines and knives cause small nicks on the surface and tight or broken picks will result. Pin boards are supplanting roller boxes for transporting quills, both full and empty, the exchange being made at the loom.

### Temples

Temples should be of cork, rubber, corduroy, velvet, or some such type of covering. On many weaves, temples may be done away with, making a more preferable arrangement.

### Cleanliness

Here is one frequently neglected source of second quality cloth. Looms should be given an initial thorough cleaning and frequent subsequent cleanings. Dirt, fly, gum, and oil, will collect and jar loose into the cloth from all directions. Especially at the batteries, boxes, and dobby heads. Oil should be used sparingly, and from the hands of a skilled workman.

Hand-washing should be compulsory, and pails of water placed at easy access to weavers and loom fixers. Clean rags should be hung on looms daily, and a small box or bag of magnesium chalk or starch placed at each loom. Weavers should be instructed to dust their hands frequently with this chalk or starch, thereby

counteracting the perspiration and preventing dirty knots. Loom fixers should be cautioned against laying tools or hands on the cloth, or touching the yarn in any manner.

## Pre-Treatment of Filling Yarns

There are a number of advocates of pre-treating filling yarn, and it undoubtedly has certain advantages. A light oiling or a soaking out in mild soap solution gives a softness to regular yarns that aids considerably in running quality. For best results, the yarn will have to be in skein form.

Oiling may be done by sprinkling, or with an atomizer; the skeins being laid on a table and later hung or bundled to allow further penetration of the oil. Especially refined oils are used, and the rayon manufacturer should be consulted before an oil is selected.

The soap soaking is more to be preferred than oiling, as it gives a better coating and is more easily removed in the finish. A good bath is prepared as follows: Dissolve one to two per cent (on weight of water) of pure olive oil soap granules in soft water, boiling up if necessary, and use at 120 degrees F. The rayon skeins, wrapped in rags, are immersed and allowed to soak for 20 to 30 minutes, extracted, shaken out, and dried. The winding quality is noticeably improved and the copped yarn lays much better and balloons less in the shuttle. Broken filaments are also considerably reduced. Most of the yarn delivered in cone form contains a small amount of neutral soap and this yarn cops and runs in the loom with comparative ease.

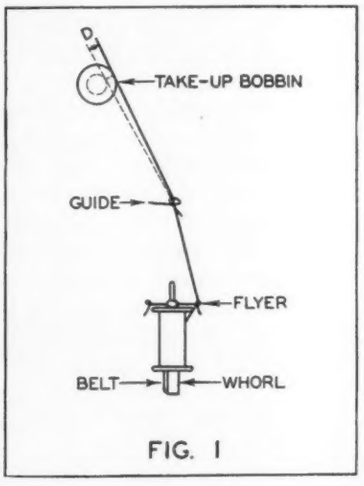


FIG. 1

## Pre-Treatment for Twisting

When viscose rayon yarns are to be given additional turns per inch, it is necessary to soften the filaments slightly. If the amount does not exceed 30 to 35 turns, either the oil or soap-soaking treatment as described is found sufficient. However, if crepe twist is desired, the process is slightly more complex.

There are at present on the market numbers of "compounds" for preparing viscose rayon for crepe twist, all having certain merit. Most of them are merely mixtures of soaps, oils, perhaps starch, and a small amount of glue. While they may all be safe to use, it is best to conduct a series of tests for crepe quality and finish before deciding upon a particular brand. The preparation of soaking baths is practically the same in all cases, merely boiling up the mixtures and cooling to a temperature convenient to use. After soaking, the skeins are extracted, dried, and processed in the usual manner. It is not necessary to "load" the yarn with the compounds, as good crepe twisted yarns are being made with only 3.00 to 3.50 per cent additional weight or "clearance". The amount of clearance is dependent on the concentration of the mixture and the temperature of the bath. A good working temperature is 120 degrees F. Drying should be carried out at a fairly low temperature, 130 to 140 degrees F. being the usual range, and in a circulating air dryer.

## Twisting

In order to achieve the best effects with twisted rayon yarns, it is essential that the turns per inch be inserted as uniformly as possible. A constant spindle speed is necessary, and all possible chance of yarn slippage eliminated. The best type of machine for this is the silk spinning frame, wherein the yarn is drawn from a rotating spindle bobbin up through a flyer and on to a friction-driven take-up bobbin. A more even twist is possible on this machine due to the easy accessibility of the spindles. Each spindle functions as a unit and quick speed adjustment is very simple. Spindles are mounted on a swing and kept in contact with an endless belt drive by means of a spring. By keeping the tension on these springs uniform the same spindle speed is maintained, with resultant evenness of twist.

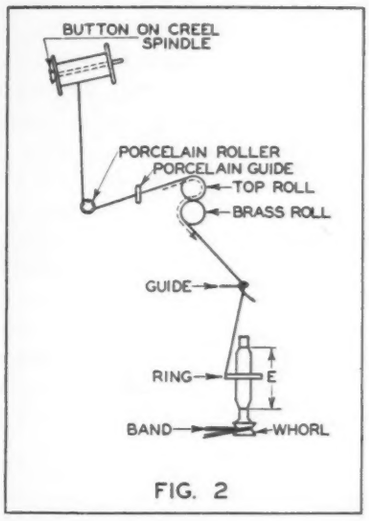


FIG. 2

There is another argument in favor of this type frame, for inserting the twist evenly, and it is best explained by glancing at the accompanying Fig. 1 and Fig. 2. In Fig. 1, the distance from the flyer to the point of contact on the take-up bobbin always remains the same. The relation, then, between the speed of the spindle and the speed of the take-up bobbin remains the same over a constantly maintained length of yarn. There may be a very slight difference in this length as the take-up bobbin fills up, but by observing the angle *D*, the difference would seem to be negligible.

Rather high spindle speeds are possible on this frame, a number of mills operating at around 12,000 r.p.m.

If, however, the mill has only the common cotton type twister, a fairly good twisted yarn is possible, with very little additional expense. On this frame the yarn is drawn downward from a spool and twisted warp wind to a bobbin. The vertical type ring is used, as a rather tight tension from the nip of the roll to the traveler, is necessary. Steel travelers are

(Continued on page 44.)

# Decreasing Lost Machine-Time with the Undervoltage Time Delay

By Edwin M. Clapp
Georgia Power Company

A LARGE number of mills are installing the undervoltage time delay equipment described here—to eliminate stoppage of motors from momentary dips in the power supply. This description will interest all mills not familiar with this development in providing more continuous operation . . . . . .

THE writer has been asked to explain for COTTON'S readers why it is the lights in the mill will occasionally blink or possibly go out for a second and then come back, simultaneously knocking the motors off; a check-up indicating the oil circuit breaker on the incoming line panel and the oil circuit breaker on the feeder switches still closed.

Any electric power system employing extensive overhead transmission lines is subject to frequent voltage disturbances caused largely from lightning flashovers. These disturbances are being isolated as rapidly as available transmission equipment will permit, however, the voltage surge is reflected over large areas. These reflected voltage surges are harmless to plant operation, provided the motor control equipment is designed to protect against them.

All standard motor control equipment as manufactured today, comes equipped with *time delay* overload relays, and *instantaneous* undervoltage relays which are designed to drop out at approximately 60 per cent of normal voltage. Therefore, the surge which drops the voltage on the feeder will cause the instantaneous undervoltage device on each piece of control apparatus to function, resulting in a shutdown plant, even though the feeder to the customer is still energized. The lighting distribution system does not have undervoltage protection and therefore a momentary surge only causes a blink. Many of these surges from one cause or another are so dissipated by the time they get to the customer's control device, they do not have sufficient force to do any harm, but not very often is this the case.

The Georgia Power Company and the manufacturers of electrical apparatus have worked out an ingenious, inexpensive, reliable solution of this problem which virtually gives the plant automatic operation.

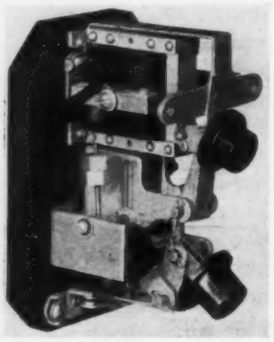
The electrical manufacturers have developed and put on the market a device known as a "time delay undervoltage mechanism" designed for a maximum delay of five to six seconds, although usually 2½ seconds is ample. These devices are simple, rugged, positive in action, and quite inexpensive. This equipment is designed for use on the control of squirrel cage and slip-ring type induction motors. Undervoltage time delay has also been worked out for control devices operated by shipper rod.

The application of this device is very simple. Where across-the-line magnetic type starters are used, a special push button station is required. Where a compensator is required a simple fly wheel mechanism is attached to the holding coil undervoltage release device. (For descriptions of the method of operation, see the captions of the illustrations of these two types herewith.)

These undervoltage time delay units permit the motor to ride these momentary dips and keep it from dropping out of service, unless the duration of the disturbance exceeds the time setting of the relay. In such cases the relay functions and the circuit is opened.

During the period the undervoltage time delay device was being developed, the operating department of the Georgia Power Company perfected a practical theory of operation which is a decided advancement. The plan is, in case of a fault on the feeder itself, to have the breaker designed, and the relays so calibrated that the feeder breaker will open, spill the surge and reclose practically instantaneously (approximately one-half second). This operation will, of course, effect an outage in service, but if the customer is equipped with undervoltage time delay and the feeder breaker reclosing device operates in less time than the undervoltage time delay setting, the customer is not affected, and the surges are rendered harmless.

Arrangements were made to make a



Photos used in this article, Courtesy General Electric Co.

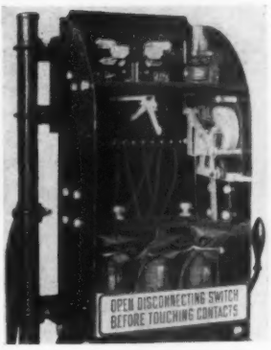
*Right, Undervoltage time delay push button station.* The push button station has two sets of contacts, both normally open and operated by "start" and "stop" buttons, a small undervoltage solenoid, and a gear-and -pendulum arrangement similar to the escapement of a clock. The entire mechanism is enclosed in a cast-iron box arranged for ½-inch or ¾-inch conduit. Ample provision is made inside the case for making connections and adjusting the timing mechanism.

Pressing the "start" button closes the pilot circuit of the magnetic controller and also that of the solenoid. When the solenoid armature picks up, a holding circuit in parallel with the pick-up circuit is made through a contact at the bottom of the armature. When voltage fails, the solenoid armature starts to fall, but is retarded by the escapement mechanism, so that a 2½-second delay occurs before the holding contact opens. This delay can be adjusted by changing the length of the pendulum on the escapement.

In case voltage returns before the holding-circuit contact is broken, the solenoid is again energized, the armature picks up, and the contact remains in the closed position.

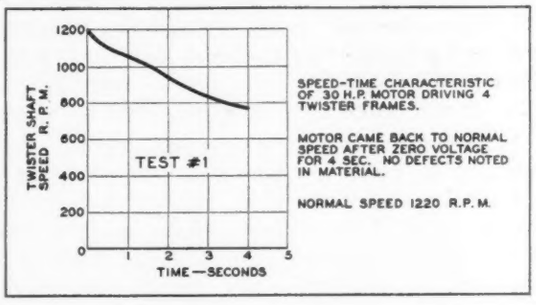
To stop the motor under normal conditions, it is necessary only to press the "stop" button, which instantly opens the holding circuit to the magnetic controller.

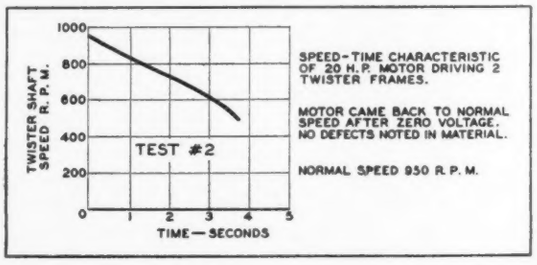
practical demonstration of this theory of instantaneous reclosing. The place selected for our proving ground was a textile mill served from a 38-kv feeder, located 25 miles from the primary substation, running through a mountainous section heavily infested with lightning at times. This 38-kv feeder extended fifteen miles further and dead ended. Eight 25-hp four-frame motors controlled by magnetic type switches were selected, all pulling the same load, four with undervoltage with 2½-second time delay push button station, and four with instantaneous push button stations. The time selected was Sunday morning, the eight motors operating fully loaded; everything else in the mill was off except the lights. At a predetermined time a dead short circuit was thrown on the line, ten miles farther out from the primary station than the point at which the eight motors were located. The 38-kv feeder breaker opened and reclosed so fast that only the instantaneous undervoltage relays on the motor went out. The four motors with undervoltage time delay never even hesitated. The effect on the lighting by the instantaneous reclosing of the feeder breaker was no more severe than an ordinary surge. The feeder breaker was tripped two more times and in no case was the operation of the four motors with the undervoltage time delay equipment disturbed in the least, whereas the four motors with the instantaneous voltage release tripped out. This test proved conclusively to us that this method of operation was sound.




*Left, Compensator with undervoltage time-delay relay installed.* This consists of an undervoltage solenoid, with an armature to which a rack is attached; a flywheel, on the shaft of which is a pinion; and a toggle and latch mechanism. With the solenoid energized, the toggle mechanism maintains the latch in such a position that the compensator switch is held in the running position. When voltage fails, the armature and rack attempt to drop down to a position where the toggle will be tripped. The rack, however, engages the pinion, and a delay of 2½ seconds occurs in accelerating the flywheel sufficiently to allow the rack to trip the toggle. If voltage returns within 2½ seconds, the solenoid is re-energized, and the armature and rack return to their original position before the toggle is tripped.

The mechanism is so designed that, on the upward movement of the rack, the teeth on the rack are not engaged with those of the pinion, permitting instantaneous operation. Instantaneous tripping of the switch is accomplished by pressing a "stop" button on the cover of the compensator, not included on the standard compensator.

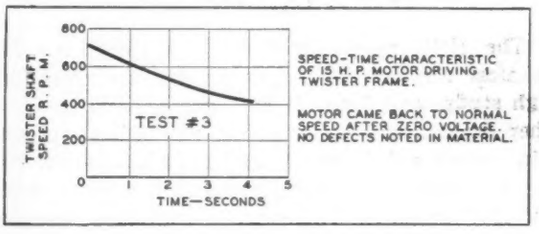



During the momentary surge period the motors are either coasting or operating at reduced voltage. The question came up regarding the coasting effect on the goods in process. The Georgia Power Company ran a series of tests, in one of the largest tire cord mills in the state to determine what, if any, the effect really was. The attached curves show the character of tests that were made. Samples of yarn being twisted at the time the tests were run were taken to the laboratory along with regular production samples for complete test. It is interesting to note, both sets of samples checked together on all characteristics, and the laboratory was not able to differentiate between sets.

The improvements the utilities have made in continuity of service in the last few years is evidence of not only the advance in the art and skill of operation, but the desire on their part as well, to render 100 per cent service.

Where undervoltage time delay has been installed in customer plants approximately 80 per cent of the interruptions per year have been eliminated. The use of instantaneous reclosing makes the installation of undervoltage time delay compulsory, and when both instantaneous reclosing and undervoltage time delay are used interruptions are practically eliminated, except in cases of major outages, which are mighty few.




The utilities are ready and willing to develop their operations to a point where interruptions to service in industrial plants will be virtually eliminated. The speed at which they arrive at their Utopia will be increased by the acceptance by their industrial customers of undervoltage time delay equipment.

## Mass. Permits Night Work for Women

For the duration of the life of the National Industrial Recovery Act, employment of women in cotton textile mills in Massachusetts after 6 p.m. will be permitted. Information received at closing time for this issue is to the effect that the law prohibiting the working of women after 6 p.m. which has been in force in Massachusetts for some years, was suspended by action of the state senate and house of representatives. It had been forecast for some time prior to the vote that the measure would be nullified, in order to permit the operation of two shifts in Massachusetts mills, with women workers included, under the terms of the cotton-textile code of fair competition.

# The Cloth Room--Some Helpful Plans and Suggestions

MONEY secured from economies in the cloth room is just as useful as that saved elsewhere. If, in your search for means of reducing costs in carding, spinning, weaving and elsewhere, you have overlooked the innocent-looking cloth-room—this article will suggest to you a number of ways in which genuine savings may be made by changing some of the established methods there.

The author's idea of a suitable cloth-room layout is given in the sketch. Your ideas are invited.

IN VIEW of the large amount of attention now being given to detailed operations in the mill, some discussion has arisen as to what can be done in the cloth room. Of course the degree of improvement in any job is governed, to a large extent, by the nature and extent of improvements previously made. However, there is always some better practice that can be inaugurated, as we are not perfect now nor will be ever be. The greatest incentive to work, is the opportunity to improve and to advance, and today the extent to which we improve means our survival in business, so there is no department too insignificant and no payroll too small to demand attention.

### Reduce Manual Handling

The cloth room, often omitted altogether from technical discussion, is open to just as much thorough study, and demands as careful planning, as any other department. In any cloth room all of the stock being processed is manually handled, at least once, and in most cases several times, which makes handling cost the biggest item of expense in cloth room operation, hence, the biggest enemy to economical processing. Our first step, therefore, should be to reduce this to a minimum.

To the writer's mind, there are two main ways in which to reduce handling cost, the first being to reduce the actual amount of handling to as low a degree as possible, and second, to see that wages are compatible with existing conditions of competition. It is the duty of every management to arrange the processing of stock so that it can be efficiently handled with a minimum of effort and lost motion.

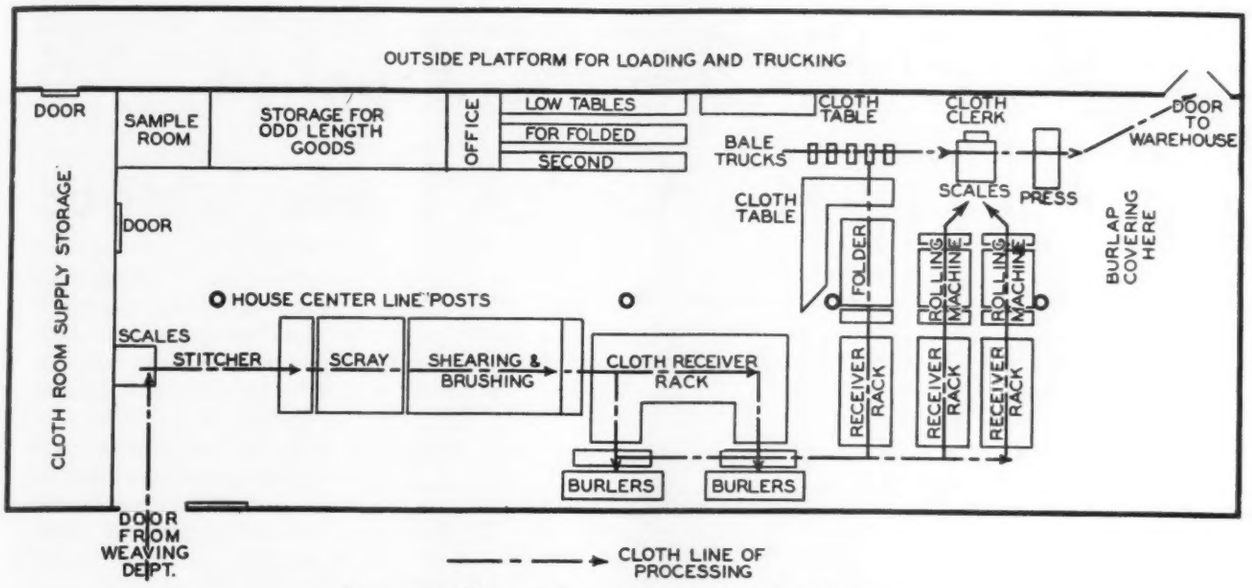
The essential elements in general cloth room work are cleaning, classing and packing, in the accomplishment of which there are certain fundamental operations involved. Before beginning a discussion of each of these operations we wish to state that we consider burling a cleaning operation. We believe that better results are obtained by taking this work off the classers and putting it on cheaper help, even though we institute an additional process in doing so. We feel that a cloth classer is to the mill what the cash register girl is to a cafeteria, and that his work should be specialized accordingly. Too much attention cannot be given to the inspecting personnel, which should be composed of high-type, dependable men whose loyalty to the mill is above question. Upon this personnel rests the responsibility of the mill's reputation in the eye of the customer; also the responsibility of knowing that good commercial cloth with certain defects should not be classed as seconds. Men whose judgment and dependability qualify them as classers have no business picking knots, washing spots and repairing minor defects. Their time is too valuable.

**Good qualitative selection is the imperative requirement in the cloth room.** To our mind, selection should be the last operation prior to packing, as this enables a thorough check, not only on the weaving quality, but on the preceding cloth room operations as well.

As stated, we divide cloth room operations into three distinct classes, the first of which is cleaning. This involves, in addition to actual cleaning, the preparation of the cloth into suitable-sized packages for handling at subsequent processes. Here, in the first stage of handling, is the place for our study to begin. The most common practice is to continually roll, unroll and re-roll the cloth from one process to another until it is finally folded and packed, or put in rolls, involving a lot of duplicated effort, which, to us, seems useless.

Our conception of a properly laid out room is one whose dimensions permit tandem arrangement of processes. A continuous run is essential to low handling cost. Every time a roll of cloth is run at one process and set aside, another operator is forced to re-handle it. The scray, often used in finishing plants, can be used to advantage in the cloth room. It is possible to put a scray in front of the stitcher rolling machine, shearing and brushing in one continuous operation. This has the double advantage of requiring less help and speeding up the production. A unit so arranged should have a productive capacity of 80 to 100 yards per minute. Local conditions will often limit speed, but the fastest possible run is the best.

Taking the cloth from this unit in as large size rolls as can be practically handled, we deem it wise to have it burled over slanting top rolling machines. Here all knots and slugs are removed, stains washed out and minor weaving defects repaired. At this process all information regarding mechanical loom defects should be recorded for relay to the weave room. Persons doing this work should be trained in fundamentals of classification. Cloth having been burled is ready for the folders, or last rolling and




A suggested lay-out for a gray goods mill cloth room

classifying process, as conditions may require. All fold goods should be turned through, and all roll goods, after boiling, should be looked at by the highest class men practically obtainable, as a matter of precaution before final packing. Any goods having been classed as seconds under the foregoing system should then be laid aside for final inspection by the department head, after which they are shown up to the weaver who made them. Firsts are immediately designated for packing. After seconds have been seen by the weaver we find it a good policy to have the mill superintendent, or someone connected with the general oversight of the entire mill, go through them. In our seconds, we may feel the pulse of our entire mill. Here is the whole picture of quality performance, not only of the weave room, but of the carding, spinning and warping as well.

The packing of goods should never be slighted. The customer sees the package before he sees the cloth, and, since first impressions are often lasting ones, packages should be carefully and neatly prepared, and so built as to protect the cloth under the most trying conditions of transportation. In arranging the packaging process we should bear in mind, as in the other processes, that useless walking and wasted effort should be avoided. This job should be so arranged as to facilitate the receiving of stock to be covered and procuring supplies incident thereto. It should also permit easy and convenient removal of completed packages to the place of final disposition.

The main thing needed in the average cloth room is that more thought be given to detailed operations. A cloth room can be checked for efficiency of performance each week. It is a simple job to figure the theoretical capacity and to check it on a percentage basis. A 30 or 40 percent spinning efficiency sounds absurd, and would never be permitted. What about that cloth room with a mechanical possibility of 200,000 yards a week, which often has to strain to care for ninety or one hundred thousand yards? The degree of efficient operation obtainable in the cloth room is in an inverse ratio to machine stoppage, and in most cases increased efficiency in the operation of cloth rooms is not dependent on the purchase of expensive equipment; the machinery used, whether built at the mill or bought from machinery builders, must be up-to-date.

In reference to housing a cloth room, we prefer a single story shed adjoining the weave room. The roof should be of the monitor or saw-tooth construction in order to permit proper lighting. Cloth room ventilation in most cases is self-sustaining, due to the exhaust fans in brushing and shearing units. Humidity is desirable in the cloth room to aid in holding moisture content which has been introduced into the goods at considerable expense. Adequate storage space for the proper care of samples and odd lengths of goods is a necessary feature to include.

In the accompanying sketch the writer endeavors to show what we consider a good lay-out for a single unit cloth room, in which goods are packed in both bales and rolls. Variations may be made to suit individual requirements, but taken as a whole, this arrangement provides for a maximum of selective care with a minimum of preparatory handling.

## Changes in Allis-Chalmers Officials

Two changes in the official organization of the Allis-Chalmers Manufacturing Co., Milwaukee, Wis., were recently announced. L. W. Grothaus, who has served as general representative in charge of the sales organization, is now assistant to the president, in immediate charge of the company's interests in connection with the National Industrial Recovery Act. He had been general representative since January 1932.

Walter Geist has been made general representative. He has been with the company since 1909, and is the inventor of the "Texrope Drive", the multiple V-belt drive introduced by the company about eight years ago. Mr. Geist has been assistant manager of the milling machinery department since 1928, during which time he traveled in the United States and abroad in the interests of Allis-Chalmers.

# SOFTENERS—As Applied in Finishing Cotton Piece Goods

(Continued from July issue)

By J. Andrew Clark

Chief Chemist, Dutchess Bleachery, Inc.

THIS continues the discussion of Softeners, which began in the July issue. This is one of a series of articles on the subject of basic materials used in cotton piece goods finishing. Water was covered in the first article.

The next installment, to appear in an early issue, will discuss Starches, Gums and Dextrines . . . . . .

OF THE many fatty oils, castor and olive products predominate in cotton finishing, where their use has been based on the soft lofty and lustrous-softness produced when used in moderate amounts. Large quantities have the effect of producing a leathery, full and sometimes greasy feel. The various other oils, for example, cottonseed, corn, and red oil, have been used as adulterants of these former oils or have been sold in competition when the differences in price of the various oils warrant. An objection to the use of these products was the danger of oxidation with consequent development of rancidity. This danger can now be minimized by the use of inhibitors. The presence of small amounts of various substances such as dihydroxyphenols, napthalenes, and other similar products practically prevents oxidation of olein and other oils. One part of hydroquinone will, in fact, prevent 40,000 parts of linseed oil from drying. It would seem, therefore, that the application of this principle to softeners would insure against that rancidity in oils and tallows due to oxidation especially in the finished goods. One commercial sulphonated olive oil shows the presence of approximately 1 per cent of a phenolic product which was presumably added for this very purpose.

The consumption of sulphonated olive oil is apparently on the increase with cotton finishers, not particularly due to shortcomings of the older castor oil products but more likely to good salesmanship. This is undoubtedly owing to the recent exceptionally low price of olive, coupled with the fact that practically all the attraction for the castor oil business has been removed by several years of close and ruinous competition.

### Castor Oil

Castor oil is generally obtained by pressing the heated seeds of the castor oil plant (*Ricinus Communis*) which contains 50-60 per cent oil. The first pressing gives a water-white viscous oil, while that from the second and third pressing is somewhat colored. Boiling with water to remove the mucin follows the pressing after which the oil is clarified by filtering through bone black. Unlike most oils, castor is soluble in alcohol and insoluble in petroleum ether. Although its compounds are widely used, the natural oil has only a limited use in finishing. It is occasionally added to softeners to increase the amount of free oil for backfilling, and is also used as a plasticizer in coating compounds due to its non-drying and lubricating properties as well as for its viscous body.

Of the manufactured products, the various sulphonated products are by far of greatest interest and most widely used. This material was investigated and recommended for dyeing in 1834 and in 1860 seems to have been widely employed in the dyeing of Turkey Red in place of rancid olive oil, and has been known by many names, as Turkey red oil, alizarine assistant, soluble oil, olein, monopole, as well as sulphonated castor oil, etc.

Castor oil differs from most of the fatty oils in that it is the glyceride of a fatty acid containing an hydroxyl group known as ricinoleic acid. When sulphonated by the ordinary methods, combination takes place with the elimination of water and the formation of the sulphuric ether of the ricinoleic acid, as well as small amounts of other complex fatty products. Some unchanged oil is also usually present. This mixture, after partially neutralizing and diluting, makes up the ordinary Turkey red oil. Modifications in proportions, temperature, and time of reaction all have an influence on the composition of the finished product so that it is not surprising that many grades are offered for sale.

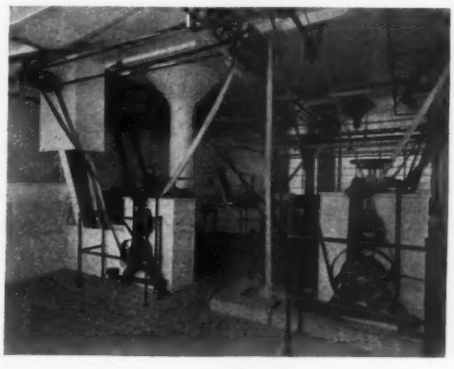
This product is generally manufactured by slowly mixing 20-40 per cent concentrated sulphuric acid with castor oil while maintaining a definite temperature control, usually not in excess of 100 degrees F. Sulphonation proceeds for from 12 to 24 hours with the resultant mix being soluble in water when tested. The excess sulphuric acid is removed by washing with brine or concentrated glauber salt solution, following which the fatty acids are partially neutralized with caustic soda or ammonia. The finished product is usually sold as a 50 to 75 per cent oil with the value commonly based on the fat content. This practice has resulted in much confusion in the trade since a 50 per cent oil contains only 42-45 per cent fat and a 75 per cent product 63 to 66 per cent by weight. The degree of sulphonation is also of importance in grading these oils since stability to salt, acetic acid and

boiling increases with the amount of organically combined sulphate. A typical analysis of one commercial oil follows:

| | |
|---|---|
| Water | 25.29 per cent |
| Total Fat | 67.00 per cent |
| Combined Alkali | 1.93 per cent |
| Combined $SO_3$ | 4.73 per cent |
| Free fatty acid | 33.00 per cent |

### Olive Oil

Olive oil has long been used in the textile industry although until recently, its use was almost entirely confined to the processing of silk. The oil is obtained from olives by pressing as well as by extraction with solvents. Several grades of oil are obtained, varying according to both the method of extraction and ripeness of the olives. These are first crushed with light running edge rolls to leave the stones unbroken and produce a light greenish product known as virgin olive oil, which is used mainly for edible purposes. The pulp is then mixed with hot water and given a second pressing, after which this operation is repeated. The resultant oil being darker is of a lower grade in each case. The finished product is known as foots and is used for soap stock. The kernels from the stones also are pressed to yield oils from a light golden color to a green product which are known as olive kernel oils, and are similar to the other oil in most respects. In addition, a low grade rancid product known as Gallipoli oil was one of the first oils in cotton processing when the early Turkey reds were dyed exclusively on a mordant prepared with this oil.



Courtesy, H. W. Butterworth & Sons Co.

Washing machine with water and acid squeeezr . . . . . .

The high price of olive oil has been a constant temptation for adulteration with the result that this product has been frequently cheapened, generally by additions of cottonseed, rape, peanut, tea-seed and light hydrocarbon oils, and in many cases, these other oils have been fraudulently sold as olive. This is not at all a strictly American practice, for it has been the custom of some foreign press operators to pour raw cottonseed oil in the presses while extracting the oil from the olives. Many brands of foreign oils, in fact, were formerly known to be spurious. This practice has been reduced somewhat under present market conditions and Federal import restrictions.

Chemically, this oil is a clear, non-drying, liquid which solidifies at from 0 degrees to —9 degrees C. and has a specific gravity of .914 to .918. The edible grades usually contain .3 to .5 per cent free fatty acid while the oils used for textile finishing are ordinarily limited to 5 per cent with soap stock running higher. It is composed essentially of 72 per cent olein and linolein, and 28 per cent palmitin. Several of the various authorities disagree as to the presence of stearin, but in any case, if present, it is only in small amounts. This oil is readily emulsified on shaking with small amounts of alkali, especially so in the case of industrial oils of high free fatty acid content. The edible grades, however, do not form emulsions as well, nor as stable as the former. These emulsions are used more in the woolen industry as a fiber lubricant.

The sulphonation of olive oil proceeds somewhat differently than in the case of castor oil, in that the reaction of sulphuric acid on oleic acid does not yield sulphuric ethers with the fatty acid but is considered to form addition products.

This oil, as well as other oleins, reacts with sulphuric acid in the cold to form several molecular modifications of oleic acid as well as a sulphuric acid addition product of oleic acid, namely, oxyoleic, oxystearic, hydroxystearic and oxystearic sulphate. This latter acid is generally claimed to be the soluble part of the oil and on heating with dilute acid breaks down to oxystearic acid, while the former three fatty acids are very similar to stearic acid and are especially liable to separate on standing or chilling.

The technical preparation of this product has been a stumbling block until recent years to many of the soluble oil manufacturers. Rigid supervision of the various manufacturing steps was necessary, since uniformity and quality can be easily influenced by slight changes in conditions. Jacobs manufactured this oil successfully in 1884, sulphonating at temperatures not exceeding 32 per cent C. with no decomposition of the sulphuric acid to sulphur dioxide.

Slight differences in manufacturing conditions, such as time and temperature of sulphonation, ratio of acid, and method of washing, affect the relative amounts of the various oxyoleic and oxystearic acids as well as the amount of sulphuric addition products. This is reflected in the physical appearance of the finished oil and accounts in some measure for the many different appearing commercial oils. These products are usually offered in 50 per cent and 75 per cent concentrations while the appearance of the various oils differs greatly. Clear light green and light brown oils are offered as well as rather viscous, turbid types. The green color may be due to additions of chlorophyl and might not indicate the presence of olive at all. Sulphonation is said to be facilitated by the addition of 10 per cent to 20 per cent of castor oil with the formation of clear oils, and while most salesmen claim competitors' products of this type to be so made, they stoutly proclaim the purity of their own product. These oils may also be divided into the high and low sulphated types, in much the same manner as the castor oil products. While the first type is claimed to be more stable for use in the dye bath, and the latter is used to best advantage in finishing, this division is on the whole, mainly salesmanship and is probably disregarded by the bulk of the consumers using the product in cotton finishing with no adverse consequences. One exception to this statement was noted, however, in the case of a low sulphated oil to which approximately 30 per cent of raw oil had been added

by the manufacturer. The thought was that the emulsion would slowly break down with uniform absorption of the oil by the cloth. Unfortunately, this took place too rapidly with formation of free oil on the surface of the bath and the consequent staining of the goods.

Typical analyses of commercial oils are:

I. *Paste Type.*

| | |
|---|---|
| Water | 25.49 % |
| Combined $SO_3$ | 4.64 % |
| Total Alkali | .906% |
| Total Fat (by weight) | 69.94 % |

*Components of fat:*

| | |
|---|---|
| Fat as fatty acids | 27.55 % |
| Fat as soda soap | 8.24 % |
| Fat as neutral oil | 33.78 % |

| | |
|---|---|
| Iodine No. of fatty acids | 45.1 |
| Acetyl value of fatty acids | 119 |

This was a light green, thick, semi-paste product which was quite stable even after standing one year, and was quite satisfactory as a finishing material.

II. *Clear Oil Type.*

| | |
|---|---|
| Water | 31.39 % |
| Combined $SO_3$ | 1.39 % |
| Total Alkali | .983% |
| Total Fat (by weight) | 65.59 % |

*Components of Fat:*

| | |
|---|---|
| Fat as fatty acids | 23.20 % |
| Fat as soda soap | 10.03 % |
| Fat as neutral oil | 32.19 % |

| | |
|---|---|
| Iodine value of fatty acids | 57.5 |
| Acetyl value of fatty acids | 169.7 |

This analysis was made on a commercial oil offered at a much lower price than the above. It was a light brown clear oil when offered, but on standing a short time, separated into two layers, which only mixed again with vigorous stirring, and then only with the formation of a slight milky emulsion. The low value for combined sulphate indicates the reason for this lack of stability.

Other analysis of satisfactory clear oils shows much higher sulphate content, approximately 5 per cent to 6 per cent, as well as less fatty acids combined as soda soap. Even the clear types will partly solidify in cold weather, though on warming, they return to their original condition.

While the bulk of the olive oil softeners are used in finishing silk and rayon, their use is apparently spreading in the cotton trade. It is rather doubtful, however, if any material advantage is obtained, other than a slight change in the odor, by this substitution. In fact, many finishes which were formerly obtained with sulphonated tallow, are now duplicated by the same finishers with oil, a wider difference in working characteristics than exists between the two oils.

A recent example showing this nicely was one in which a backfilled cloth submitted by one finisher, on analysis, showed approximately 5 per cent tallow while the original reference swatch had an olive oil content of only 2 per cent, yet the former was considered a match and accepted by the customer.

Any of these oils are, however, likely to cause trouble through foaming and thickening of the mix. Foaming, of course, is undesirable due to bubbles forming on the cloth giving an irregular finish, or in backfilling, a streak may develop through a bubble being caught under the doctor blade. Thickening of the mix in the mangle box on cooling necessitates a new mix with consequent loss of materials and labor. The oils having low combined sulphate content, moreover, are more liable to break down on heating in the presence of metallic salts with formation of free oil which may adhere to the cloth forming oil spots. This trouble is, however, not likely to occur with the more highly sulphonated products. Examples of some formulae are:

I. *Dobby Mesh Cloth.*

1 gal. Sulphonated Oil—50%
20 lbs. Tallow Softener
1½ oz. Indanthrene Blue
40 gal. Mix—mangle

II. *Mercerized Fancy Shirting.*

75 lbs. Potato Starch
50 lbs. Gum Trag (10%)
3 gals. Sulphonated Oil—50%
140 gals. Mix—mangle.

The sulphonated oils, moreover, make excellent carrying and dispersing mediums for mineral oil and wetting out agents. Mixtures with white mineral oil give a brilliant finishing oil for broadcloths and other light fabrics at a considerable saving over the cost of sulphonated olive. Mixtures with pine oil or other solvents can be made to jell and can be quite deceptive in regard to their fat content and money value.

### Cocoanut Oil

This fat is obtained from the dried flesh of the cocoanut tree (*Cocos mucifers*) fruit and is obtained mainly from the Southern Pacific Islands, India and Ceylon. The cocoanut is split by hand and dried in the sun for a few days during which time the shell separates from the meat, after which the meat is known as copra. Artificially dried copra is prepared but this product yields an oil of slightly inferior quality and color. The oil, itself, is obtained by pressing and is a white to light yellow, semi-solid fat at ordinary temperatures, and possesses a pleasant characteristic odor when fresh.

There are three commercial grades of the oil—Cochin, Ceylon and Continental or Copra—of which the first two are more commonly used for making textile finishing products. Cochin oil is the choicest, being superior to the others in color. It is also lowest in free fatty acid as well as cleanest. The Ceylon product, on the other hand, is somewhat more yellow in appearance. The bulk of these oils are consumed in the soap and oleomargarine industries.

Chemically, the oil is a mixture of several glycerides, myristin and laurin predominating, with smaller amounts of palmitin olein and others also present. An average free acidity of a number of Ceylon oils was found to be 7.15 per cent while a similar average for Copra oil showed 8.4 per cent. Characteristic of the oil is the relatively large amount of volatile and water soluble fatty acids. It is a non-drying product with an exceptionally low iodine value of 8.4 to 9.3. The oil saponifies readily, even in the cold, with strong caustic soda solution to form soaps which are not eas-

ily precipitated by salt water, and is accordingly used as a marine soap. A twenty per cent soap is quite firm at ordinary temperatures and is sometimes used in this concentration as an ingredient of kier soaps and other scouring compounds used in the textile trade along with a small amount of solvent.

Saponified emulsions as well as the sulphonated product are offered to finishers in various concentrations. One sulphonated product sold in New England had a fat content of only 14 per cent to 16 per cent and was a turbid white liquid, while another such product sold in competition contained 80 per cent fat and was a clear soluble oil. The saponified cocoanut oil softeners are easily made by heating the melted oil with the required amount of a concentrated caustic soda solution until saponification is complete, following which the mixture is diluted to approximately 20 per cent fat content.

One such formula calls for

| | |
|---|---|
| Cocoanut Oil | 2060 lb. |
| Soda Ash | 135 lb. |
| Caustic 39° Be | 1090 lb. |
| Dilute to produce | 9000 lb. |

These products are finished off alkaline or neutral as desired and are exceptionally well suited for use in hard water or in mixes containing excessive amounts of salts, such as Epsom and others. Their excellent solubility, moreover, permits of easy removal on washing when this is necessary. Cocoanut oil soaps almost invariably become rancid with age, although this can be retarded by complete saponification. Softeners made from the completely neutralized fatty acids are less liable to this fault than those made from the oil itself. The great fluidity of the soap with its capacity for holding water enhances the value of this material as a softener, as well as for the lustrous sheen imparted on calendering. A shirting formula containing this oil is given here:

*Shirtings.*

1 lb. 10 oz. Wheat Starch
15 lb. Potato Starch
60 lb. Talc
2 lb. 8 oz. Stearic Acid Softener
13 oz. Cocoanut Oil Softener

40 gal. Mix

The preceding softeners owe their action to the lubrication of the fibers by fats or oils while the following are hydroscopic and owe their softening effect to the partial swelling of the cotton fiber by the moisture absorbed from the air. Glycerine, glucose and Epsom salts are commonly used for this reason while a few other compounds such as calcium, magnesium and zinc chlorides receive much more limited attention. Some of the newer commercial glycols and glycocols have also been proposed and though effective, are rather high in price and consequently are not used extensively at present.

Glycerine is a thick, transparent, ordinarily colorless and odorless liquid with a sweet taste and specific gravity of about 1.266 at 15 degrees C. While this product is ordinarily a liquid, it can crystallize on prolonged storage in low temperatures. This is, however, a very infrequent occurrence.

This material is very hydroscopic and can absorb 50 per cent of its weight of water on exposure to the atmosphere. It is to this fact that glycerine owes its uses as a softener. It is, moreover, a powerful solvent and can combine with boric acid to make an antiseptic known as boro-glyceride. At 320 degrees F. glycerine dissolves two-thirds of its weight of boric acid to form the above compound which is used to some extent in finishing as a mildew preventive.

### Glycerine

Glycerine is a tribasic alcohol obtained by the decomposition of fats on saponification which contains 9.5 per cent to 12 per cent of this material. The principal source of supply is a by-product of the soap industry and is obtained from the spent caustic liquor. This contains approximately 4 per cent glycerine and after neutralization with acids, iron and aluminum salts is filtered through presses and evaporated in vacuum evaporators. This partially removes impurities and concentrates the glycerine to about 80 per cent and is known as soap lye crude at this point. The other methods of hydrolosis yield characteristic crudes, such as saponification crude obtained usually with 88 per cent glycerine content.

The purification of the crude glycerine is performed by distillation in a complicated steam-jet vacuum still, many different types of which are in operation. The distillate is a pale straw-colored product which is sold as the dynamite grade with a concentration of about 97 per cent glycerine. Re-distillation of this product produces a water white glycerine which will remain colorless on exposure although the dynamite grade tends to increase in color due to the action of the impurities present. Water white grades are commonly sold as 28 degrees Be corresponding to approximately 90 per cent glycerine. While this product can be distilled with atmospheric pressure at 290 degrees C. a small amount of water lowers the boiling point to 164 degrees C. This temperature is, however, sufficient to partially decompose the product with evolution of acrolein and causing excessive loss of the glycerine. It is for this reason that steam jet and vacuum distillation is necessary. The water white grade may change on storage to give a pronounced glue-like odor, which probably reflects the source of the fats from which the product was produced.

One per cent of glycerine added to the finishing mix usually gives a pronounced softening effect.

### Glucose

Glucose is another of the hydroscopic softening agents and is often used also to give body and weight to the cloth. Its use is objectionable with colored goods because of its reducing action. Many direct colors are seriously affected by it, while a few of the vat colors may also show changes of shade during and after finishing. Jade Green and Yellow G are especially susceptible to its reducing action when the cloth is first laundered. A recent complaint in regard to poor fastness in a vat dyed garment was investigated and showed that on boiling with soap and alkali, the yellow trimming and the green body of the garment was partially reduced, sufficiently to cause bleeding

into white cloth in contact with it. This was confirmed by blank tests with and without glucose in the finish. Even in the case of white goods, its use is questionable when indanthrene blues are used, owing to the danger of changing the hue of blue.

Glucose is a thick, nearly colorless liquid with a sweet taste and is sold in concentrations of 42 degrees, 43 degrees and 45 degrees Be. It will not crystallize and also prevents large quantities of cane sugar from doing this.

It is manufactured by acid hydrolosis of corn starch under pressure in the more modern equipment. The wet starch mixed with acid is made up to about 20 degrees Be and run into large vertical metal cylinders where it is digested with steam at 50 pounds pressure per square inch for approximately 10 minutes or until the conversion is completed. The mix is then treated in wooden tanks with sodium carbonate solution to neutralize the acid, after which the solution is filtered. Following this, the liquid is repeatedly treated and filtered through bone black to remove various impurities and color, after which it is evaporated in vacuum pans to the desired concentration.

On the whole, then, glucose is of questionable value in finishing and its use should be carefully supervised to prevent alteration of colors.

Various metallic salts are used to some extent as softeners which absorb moisture from the air. Epsom salts or magnesium sulphate is commonly used for both this reason as well as for loading. The use of metallic chlorides, however, is open to suspicion for these are believed to hydrolize with water in the cloth to liberate hydrochloric acid on drying with heat. Calcium chloride seems to be least objectionable and is often used with starch to form special gums. Zinc and magnesium chlorides are, however, considered dangerous, the literature being prolific in regard to the use of magnesium chloride and the attendant dangers. The calcium and magnesium compounds are considered to absorb their own weight of moisture from the air, while the zinc compound is ordinarily used as an antiseptic, rather than a softening agent.

Various new chemical products such as diathylene, glycol, and others are being offered and tried as softening agents, either alone or in mixtures. Their prices are somewhat against their general adoption for cotton goods and have not as yet secured large consumption. Manufacturers are, however, offering some interesting products made from these newer materials which, in some cases, merit investigation.

## Practical Rayon Handling

(Continued from page 35.)

generally preferred to bronze. All drag and tension from the spool to the top roll must be eliminated by running the yarn on porcelain rollers, and placing a porcelain or metal button behind the spool. (See Fig. 2.)

The argument against this type frame for inserting the twist evenly can best be explained by observing Fig. 2. It will be noticed that the yarn, in building up on the bobbin, moves through the traverse shown approximately as *E*. At the top of the build, the distance from the point of contact on the brass roll to the traveler is considerably less than the distance at the bottom of the build. Hence, the twist is being inserted over a varying length of yarn, as the roll speed and spindle speed remain the same.

Where the amount of twist exceeds 30 to 35 turns per inch, it is usually necessary to resort to a steaming operation in order to overcome the kinking action of the twisted yarn. It becomes necessary then to use a bobbin that is surfaced with a heat and moisture resistant enamel. On twists up to 30 to 35 turns, ordinary shellacked bobbins serve well enough, no after-steaming being necessary.

Care should be taken to keep the frames absolutely clean, and free from lint accumulation. The rings should be wiped out at frequent intervals, and the front rolls kept polished. Avoid running the yarn around glass rods, as glass has a tendency to retain moisture and transfer it to the yarn. Top rolls should be covered with leather, or cork. Guides should be of porcelain or porcelain covered metal. Rings should be oiled at each doff. A high grade of sperm oil is recommended.

The humidity should be kept as low as possible without allowing a static condition to arise. Try to anticipate and avoid sudden and excessive upward or downward changes of the moisture content in the room.

If the top roll is large enough and heavy enough to give sufficient grip to the yarn, then wrapping the yarn completely around the top roll may be dispensed with. The work will then run much better. This passage is shown in Fig. 2, by the dotted arrow.

Twister hands should be educated to keep themselves and the work clean at all times. Doffing should be done to pin trays, and all yarn, whether twisted or not, transferred in this manner.

Once started, frames should never be stopped until they are ready to doff; as the yarn is likely to kink up between the roll and the bobbin.

Although the production from this latter type of twister is less than the latest silk twister (spindle speeds above 9,000 r.p.m. not being advisable), quite a number of them are in use with profitable results.

In re-drawing the yarn from the frame bobbins to spools, the operators should take care to pull off one or two yards from the bobbins and the spools in order to avoid any slack twist that might occur from starting or stopping the twister frame.

## Quilling (Copping)

There are a few points to make on this process, although most of them are quite obvious. Disc wheels should be periodically examined for small nicks on the edges. These nicks cause broken filaments that show up in the cloth. Case hardened disc wheels are now procurable. The yarn should be guided by porcelain, or over wheels. Glass is to be avoided as a friction or guide surface.

Tensions should be uniformly maintained and no more strain put on the yarn than is necessary to prevent sloughing off in the shuttle.

# A Clear Explanation of the Principles of the "Stretch-Out" System

THE progressive principle of re-assignment of work in the mill, through improved machinery, improved yarn, and increasing the personal efficiency of the operative—which has become commonly called the "stretch-out" system, was brought into prominence during the hearings on the cotton-textile code in Washington by the request of Senator Byrnes, of South Carolina, for the appointment of a committee to investigate the "stretch-out" and its effect upon employment. This committee was selected, and conducted hearings in Greenville and Spartanburg, S. C., the public portions of which consisted largely of testimony from selected witnesses, as to the increase in the *number of machines* tended by operatives under the multiple loom or "stretch-out" system. No effort was apparent in the public hearings to define the underlying principles of the system, which incorporates fundamental principles of progressive manufacturing that have been almost universally applied by industry.

Because of the great amount of unjust publicity and criticism that have followed various investigations into the application of these principles into the textile mill; because of the opprobrium attaching to the term "stretch-out" as it is commonly used, the real fundamentals of the idea are likely to become obscured. In connection with the South Carolina hearings, the Cotton Manufacturers Association of South Carolina, through S. M. Beattie, president, and William P. Jacobs, secretary, prepared and submitted a brief on the subject which describes the "stretch-out", its history, its applications and its results.

Because this study presents the subject in a clear and comprehensive manner, we are publishing below generous extracts from this report which are worthy of careful thought, and which will enable the mill man to clear away, in his own mind and in the minds of others whose understanding of the subject may have been confused or misconceived. The explanation given is of importance transcending the immediate consideration of the subject in connection with the code of fair competition, and without regard to current action taken. The brief in part follows:

## The Multiple Loom System Commonly Called "The Stretch-Out"

The following is an explanation of the "Multiple Loom" or "Extended Machine" system, commonly known as the "Stretch-out".

While the plan takes many forms and is applied in a great variety of methods; in principle the term is applied to that modification of the process of manufacturing which, through an improved raw material and better equipment, a mill is enabled to produce a better product in larger quantities, in proportion to machinery and man power.

### As Applied in Other Industries

The same principle will be found in the progress of all industry, particularly within recent years. The railroads, for instance, operate fewer and longer trains and thus transport a larger tonnage in proportion to the men employed. The newspapers, through the introduction of automatic presses, turn out hundreds of thousands of copies in the same time required for only hundreds of copies in the years past, and with very little increase in employment. The printers use the linotype to produce a better type, quicker and cheaper, as far as plain type setting is concerned, so that the hand compositor may devote his time to the more skilled display type setting. The steel and iron industries have adopted automatic, improved machinery to produce a better product, quicker and cheaper. The automotive industry, radio, furniture, drugs, cosmetics, foods; indeed all major lines of industry, have introduced improved, automatic machinery and manufacturing short cuts which have increased production, improved the quality of the product, reduced the cost, and at the same time increased consumption and found new markets, which in turn have justified more employment than ever before.

The system is not alone confined to industry. Necessity and common sense have decreed an increased teacher load in the field of education, and our present day children are better educated, though the individual teacher is responsible for a larger number of children.

Agriculture sees the stretchout applied in the extreme. The tractor, the harvester, the cotton picker, and hundreds of improved farm machines enable the farmer, with a smaller overhead, to care for more acres and produce a better product at a lower price.

The process of aiding human hands with better equipment and improved methods is fundamental to the progress of mankind; and the process incidentally has always amply rewarded the worker and created a demand for more products to be manufactured by others.

Records show that wherever improved machinery has been introduced, and advanced methods of manufacture installed in an industry, employment in that industry has not only not reduced, but has actually increased.

### A Normal Step in the Growth of Industry

Witness the textile industry for instance. Years ago cloth was largely woven by hand. The introduction of the loom in England brought forth tremendous resistance from the hand weavers. Progress decreed that the machinery should stand, however, and employment of weavers was increased in a few years from hundreds to thousands.

About 1900 the automatic loom was introduced. At that time it was feared that the drastic innovation would throw many out of employment. On the contrary, there are employed today many times the number which were on the payrolls of the industry of that time. The multiple loom system is not nearly so drastic a change as was the automatic loom, and it will, as has been the case with all progressive steps, develop more jobs—not less; and furthermore will reward skill with a greater earning capacity.

Improvement in raw materials and equipment, and

the installation of short cuts in manufacturing process, as represented by the multiple loom system, have been responsible for practically all progress and growth of the textile industry. The standards of living of the American textile operative are known to be much higher than the rest of the world; and are due directly to the improved methods of manufacture which reward personal efficiency.

Without the multiple loom system, and all it represents, it will be absolutely impossible to maintain such high standards of living for the American operative. Regulate by law the orderly process of growth of personal efficiency and accomplishment and you will force the otherwise ambitious and efficient operative to be content with a lower income, and a lower standard of living.

The multiple loom system is a natural step in the normal progress of the industry, which is an inevitable as night and day. No superficial regulation can possibly affect the process. All laws of nature demand it and will establish it.

The system is too complex to be practically regulated by laws or otherwise, and in fact too complex to clearly explain. The following may, however, add some light:

### The System Explained

The tendency in the textile industry in recent years has been toward specialization. The introduction of modern machinery, as in other industries, is developing skilled specialists. They, under improved conditions, with activities confined to more productive work, are enabled to accomplish more, accept greater responsibilities and earn more. The simpler duties are not allowed to annoy and retard the efficiency of the more capable, but are passed on to the unskilled.

Weavers, for example, who formerly handled inferior yarns with limited machinery, were taxed to the limit to care for a small number of looms, and were obliged in so doing to fill batteries, remove cloth and attend to the various other trivial details that arise in weaving. Now they are assisted by battery hands and cloth men. The efforts of the weaver are confined to that portion of the process of weaving that requires skill, principally that of supervision and of tying broken strands of yarn. As a consequence he can handle an increased number of looms and yet handle them more satisfactorily to himself, as well as to his employer.

The loom stops when the yarn breaks. The weaver's work is measured by the number of broken threads he can mend in a day. On a loom of given width the cloth may greatly vary as to closeness of weave. The number of picks or threads to the inch in a piece of cloth will to an extent gauge the percentage of thread breaks or loom stops per day.

The construction 20x12, commonly classed as tobacco cloth, has 20 threads in the warp per inch and 12 threads in the pick or filling per inch.

On the other hand, the construction 64x60, commonly known as a standard print cloth, has 64 threads to the inch in the warp and 60 in the filling, or 60 picks.

The construction 108x112, commonly known as a lawn, has 108 threads in the warp and 112 picks per inch.

It is obvious that these three widely varying constructions of cloth show a wide difference in number of threads in the warp and picks in the filling per inch, and therefore the percentage of thread breakage or loom stops per hour will greatly differ.

A weaver handling lawns will be theoretically faced with 5-4/10 times the possibility of loom stoppage that a weaver making tobacco cloths will have. All things being equal, a weaver who easily cares for 12 looms on this construction of lawns might just as easily care for 65 looms on tobacco cloths of the construction shown.

However, the number of threads to the inch is not the only circumstance which affects loom stoppage. The influences which affect loom stoppage are too numerous to list. Here are a few of the important factors which have a bearing: Quality of raw cotton, length of staple of the cotton, density of the weave, weight or size of the yarn, strength of the yarn, quality of the yarn, character of the weave, complexity of the weaves, cleanliness of the mill, humidity of the atmosphere, sizing of the yarn, uniformity of the yarn, condition of the looms, condition of all preparatory machinery, adjustment or setting of the loom, and preparatory machinery, and many others.

Hundreds of instances could be quoted where a weaver handling a given construction on a given number of looms, in one mill has changed mills and been enabled to more easily handle many times the number of looms on identically the same construction, due to better cotton, better machinery, better adjustments, and other more favorable conditions.

Prior to the introduction of the automatic loom it was customary for a weaver to run 6, 8 or 10 hand threading shuttle looms, according to the construction being made and the ability of the weaver. Under this method of weaving in addition to repairing the broken ends in the warp yarn, it was necessary for the weaver to put a new bobbin of filling in the shuttle and start the loom each time a bobbin would run out. In addition to this, the weaver was required to remove his own cloth from the loom as it was woven and clean the looms periodically. In addition to any loom stops due to warp breakage and the work of removing cloth and cleaning the looms, a weaver under this system with 8 looms on a 2.85 yard sheeting was required to start approximately 750 looms (or loom stops) per 10 hour day. Under the present approved method of extended labor in weaving the average operative is only required to start from 350 to 400 looms (or loom stops) per 10-hour day, and he does not have to remove any cloth, clean looms or perform other duties.

In considering this question, the determining factor is how many looms can the average operative comfortably start in 10 hours? In actual practice the accepted figure is between 350 and 400 looms (or loom stops); therefore this is the true measure of the work a weaver can perform; and the number of looms he can operate depends solely upon the number of times that the looms stop during a 10 hour day.

### Not a Governmental Problem

In the textile industry every weaver, every machine, every product presents a different condition, and a separate problem. The regulations affecting one may not satisfactorily apply to another. It is purely a case of adjusting the schedule of production to suit the particular man, machine, construction and plant involved. No mill can speed up its production per man beyond the limits prescribed by the quality of cotton he uses or the excellency of his equipment. No multiple loom system which gives the weaver more looms to attend to as a matter of physical possibility can be installed, or has been installed, without first improving the quality of cotton and excellency of machines all along the line in the mill.

Thus it can be seen from this explanation of the multiple loom system, that it is a natural development which is impossible of regulation except in the light of the specific man, mill and machine involved. It is too technical in detail and too closely woven into the mechanical operations of the manufacturing process to become a governmental problem. It is a problem which must and automatically will work itself out in the light of each local con-

dition.

As aptly expressed in an agreement between executives and operatives of one South Carolina mill during the past three years, "The fundamental principles of extended labor (the stretchout) are correct when properly applied."

### When Properly Applied

The system has been generally accepted with favor by operative and executive alike, after it has been adequately tried and its benefits seen, in cases where it has been properly applied.

The manufacturers would not by any means claim that the stretchout has been properly applied in every case. No human is exempt from mistaken judgment. There may have been cases of poor judgment, and perhaps lack of tact in applying the system by some mills. In such instances, however, the difficulties have long since been rectified. Rectification was necessary before the system could work effectively. The very nature of the system is such that unless it is approved by the workmen who operate it, it has no chance of success. A machine may be extended, but a machine load of an individual cannot be unless the individual is willing. Were it not for the fact that the great majority of the enterprising, ambitious weavers of South Carolina welcome the stretchout, it could not be operating today in a single South Carolina mill.

### The Ambitious Approve the System

The ambitious weaver sees in the system a reward for initiative and skill. He knows it dignifies his position, places much of his former manual labor on the more unskilled helpers and enables him to produce more, earn more and advance more rapidly in his chosen life's work.

If the stretchout were eliminated in South Carolina mills today, or if its application were seriously restricted, you would find a much larger percentage of weavers opposing the elimination than are now opposing its application. The resistance in such a case would come from the efficient workmen who are the "back bone" of the mill; the real producers; the workmen who have tried the system and like it.

### Earnings

Records show a very definite increase in earnings per hour on the part of weavers as a result of the stretchout. The increase in earnings, however, has been enjoyed by those ambitious, energetic, thinking types of operatives among spinners, weavers, loom fixers, etc., who have taken advantage of their opportunities.

### Rewarding Initiative

It should be remembered that piece work is the wage basis usually accepted in the mill for most operatives. Upon a piece work or production basis the weaver is paid in ratio to the yards of goods produced by the individual in a given time. The so-called stretchout gives the weaver the opportunity to produce more yards per day and thus earn more. True not all weavers do so. Some who are industrious and ambitious produce more, earn more, and are therefore satisfied with the stretchout. On the other hand, there are individuals in the mill, as there are in all walks of life, who lack ambition and are not favorably inclined toward a job or a system which pays them in ratio to their productive ability.

The advocates and objectors to the stretchout are just like the same type of individuals in all other walks of life; the ambitious and those who haven't ambition. The one confident in his own ability wishes to take a chance, and as a result of the natural gamble of life he earns more. The other afraid to stand on his own ability holds back and blames the system which rewards efficiency and initiative.

### Health

The effect of the stretchout upon the health of the operative, as compared with his labors before the stretchout, has been nil. This fact will be vouched for by the great majority of the operatives. However, as stated by the State Board of Health of S. C., this is a professional and technical subject which cannot be adequately covered except by an extensive professional research over a period of years.

## "Police" and Industrial Relations Committees Named Under Textile Code

On August 2nd, a further amendment to the cotton textile code of fair competition was adopted, covering finally the matter of the "stretch-out", which was temporarily provided for in the earlier drafts. It is believed this finally completes the code.

The new amendment sets a precedent in the industry's make-up. It provides for the establishment of a national industrial relations board for the cotton-textile industry, which will have final and absolute authority for settling disputes between employees and employers with reference to labor matters, and "shall have authority to codify the experience of the industrial relations committees of the various mills and state boards with a view to establishing standards of general practice with respect to the stretch-out (or specialization) system and other problems of working conditions."

This national board will be composed of three members, one each representing the industry, labor and the administration.

Under the national board there will be in each state, appointed by the administrator, a state cotton textile industrial relations board, composed of three members, representing the industry, the employees, and the public. In each plant, "the employer and employees may establish an industrial relations committee chosen from the management and employees of the mill, and on which the employer and the employees shall have equal representation of not more than three representatives each". The term of service of each mill committee shall be limited to the adjustment of such controversy, or problem of working conditions, for the adjustment of which the committee was created.

If agreement is not reached by the mill committee, either side may appeal to the state board for assistance and co-operation in arriving at an agreement. Such agreement must be submitted to the national board for approval.

Should a state board fail to bring about agreement, the controversy shall be submitted to the national board for hearing and final adjustment. The personnel of the national board had not been named at this writing.

General Johnson, however, did appoint himself, as representing government, Dr. Leo Wolman, representing labor, and Nelson Slater, representing industry, as the administration representatives on the planning and fair practice agency already provided for in the code.

It is understood that the new amendment to the code replaces the paragraph in the original draft which prevented any speeding up or increase in the amount of work (stretch-out) until the report of the committee on this subject had been made.

### "Policing" Committee Named

It is also announced that a committee composed of George A. Sloan, of the Institute, Ernest N. Hood and Robert Amory, representing eastern mills, and T. M. Marchant and Stuart W. Cramer, representing southern mills, had been named and authorized to act in the investigation of complaints of violations of the code.

# The Scavenger Roll

Greetings! Here The Scavenger Roll, a new department, makes its bow. Its purpose is to glean ideas from this mill and that mill, and deposit them here for you and others in pithy paragraphs. Its endurance depends upon its "fan mail". Tell the Editor if you like the idea. You can help by sending in similar brief paragraphs. Read those here, and tell us about other ideas you are using to advantage. Brevity is necessary.

## Stopping "Eye-brows."

One spinner seems to have solved the problem of "eye-brows" that hang so prominently from the top clearer flannel when the top spinning rolls are covered with calfskin. To the front of the clearer flannel he has glued a strip of sheepskin, only wide enough to let the calfskin pull the clearer waste

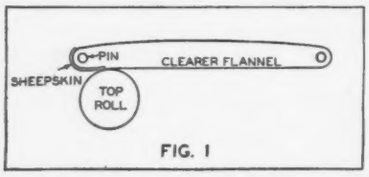


FIG. 1

well up and onto the flannel. (See illustration, Fig. 1.) The idea is, of course, that the calfskin is so smooth it won't pull the clearer waste against the rough flannel, and this strip of sheepskin gives a smooth enough surface that the clearer waste can be pulled well up and held as it should be. The idea can be, and has been, overdone by having the sheepskin strip so wide that the waste is carried over to the back of the top roll and drops into the roving. Only a narrow bearing surface of the sheepskin strip on the calfskin cot is necessary.

## Turning Down Spinning Whirls.

*More and more mills are turning down the worn whirls of band-driven spindles. This is being done at the mill, either by the mill or by contracting companies. Recently a mill bought a special lathe and rigged up a polishing chuck on a table in the spinning room for doing this work, so that one man has been turning down and polishing 500 whirls per day. As a rule, about $\frac{1}{16}$-inch in diameter is all the turning required to give the whirls a smooth, even surface and uniform diameters. The mill referred to used an ordinary cutting tool, ground to the right shape to fit the slope of the whirl. The work was done very rapidly and accurately. By putting on a larger twist gear, to take advantage of the change in the twist constant, production was increased about 12 per cent. And this required no increased speed on the part of the cylinders, so often the limiting factor in the quest for higher speeds. Smaller bands are usually used when the whirls are made smaller.*

## Unweighted Rolls on Short Cotton.

*Contrary to this writer's experience, mills are rnnning successfully unweighted middle top rolls on 1-inch and shorter cottons. A spinner in a 20,000-spindle room, $\frac{15}{16}$-inch cotton and some reworked card strips, numbers 8s-26s, explained that the trick is to increase the break draft until there is five to nine teeth difference between the middle and back roll gears. The break draft giving the best results will vary just as the total draft giving best results varies under different conditions. There are some other things that have to be watched, such as getting the flannel of the top clearer away from the unweighted roll and teaching spinners to pick top rolls with a motion in the direction the rolls are turning to keep from stopping the unweighted roll and tearing down ends.*

## What Price Speed?

An agent produced a test on 12 spinning frames on which the speed had been increased to produce the same poundage in fifty-five hours that had required sixty hours. The saving was only $1.46. The reason for no greater saving was that the jump in horsepower consumption almost nullified the labor saving. Just as the superintendent of a tire cord mill, which had idle twisters, reduced the speed on cord twisters from 5,100 r.p.m. spindle to 4,400, started up proportionately more twisters, yet made a substantial horsepower saving. Which is just one illustration of the number of tricks in this textile game.

## Keeping Picker Laps Right.

One superintendent of a mill making 90s and 100s (where everything must be just right) never allows the picker hand to set the adjusting screw on the evener. He says the last lap from the finisher at closing time may weigh 42 pounds, and the first lap in the morning, run from the same four laps, may weigh 36 pounds. He says it is all in the atmospheric conditions. Several mills have adopted the re-circulating air system for their pickers as described in COTTON, June 1931. This isn't practical without adequate opening machinery for removing the dust. Also, many mills are using regain indicators in the picker room as a tribute to the importance of humidity in the picker laps.

## Humor?

There is a strain of humor around the mills that is peculiar to them. One old classic that will ever bring back the noise of the mill is that of the fellow who carried the wheelbarrow home. Asked why he didn't roll it, replied, "Shucks, I don't know nuthin' 'bout machinery." And then there is the one from the old days when jobs were plentiful and families were continually on the move, and the moving was done in wagons. One family had an old rooster so accustomed to moving every few days that every time he heard a wagon rattling down the road he would turn over on his back and hold up his crossed feet to be tied.

## Variable Cams on Filling.

Several mills are changing their regular throw filling cams to variable throw cams. This can be accomplished by buying cams so made, and also by grinding or filing the present cams. The points of such cams are the same distance from the center, so that the ring rail goes down the same stroke each traverse, but the valleys in the cams are cut to varying depths. This varies with different ring diameters, and to some extent with different yarn numbers. For medium filling counts and ring sizes a variation of $\frac{1}{16}$-inch in the throw of the cam should be sufficient, for this $\frac{1}{16}$-inch can be increased to $\frac{1}{8}$-inch or more in the actual traverse by proper setting of the quadrant arm. The advantages claimed are that the cross winding effect allows running a shorter taper, with increased yardage on the bobbin, and eliminates sloughing at the spooler or winder. At least two mills are experimenting with this wind for high speed spooling.

## Keeping Warper Ends Straight.

*One overseer devised a simple time-saving idea for use in creeling high-speed warpers where the ends must be drawn through each creeling. He tacked a strip of card-clothing on a wooden strip, and fastened a leather eye at each end of the latter. This eye slips*

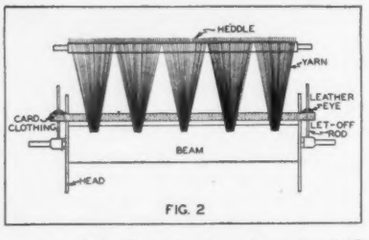
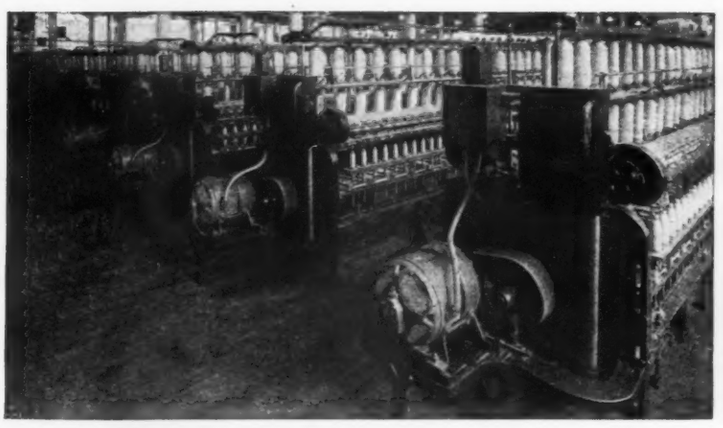


FIG. 2

*over the let-off rod at each end of the beam, (See illustration, Fig. 2). When the ends are pulled through the heddle one or more creel sections at a time it is not necessary to stoop down and wrap the ends around the beam until the next section is brought up. The ends are simply pulled through and over the card clothing which holds them until the entire creel is ready to be wrapped around the beam. Some saving in waste is claimed for this method.*

# Motor Protection for Textile Drives

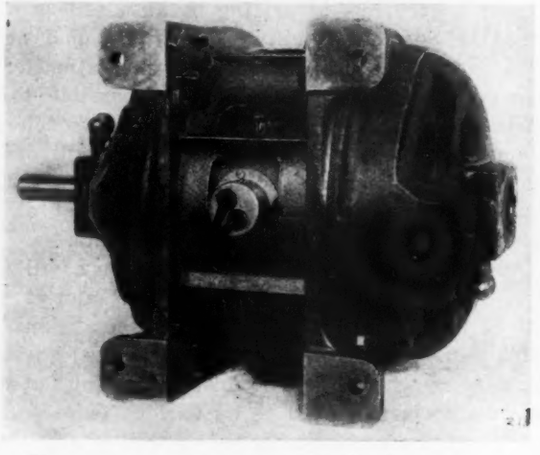
By H. W. Reding
Westinghouse Elec. & Mfg. Co.



The hazard of motors burning out from clogged ventilation is prevented by small disc thermostat on motor . . . . . .

THERE are certain conditions in textile plants which may cause motors to overheat without tripping the properly adjusted overload relay. Frequently starting and intermittent peak loads of short duration have this effect. Printing machine and full-fashioned knitting machine motors are more or less subject to these hazards.

Several years ago while inspecting some four-frame motors having screens over the air intake, a combination of dried oil and lint was found to have almost completely sealed these screens, and naturally the motors were very hot. The insulation was being damaged but the motors were saved from burnout because of the very light load being carried. Even though the motors were protected by the best type of overload device it was entirely ineffective to protect against dangerous temperature due to failure of ventilation.



Thermostat on bottom of induction motors prevents burn-outs . . . . . .

In another mill there was a hard waste machine with heavy cylinders which required an appreciable time to start. With proper adjustment of the overload relays, the starter was tripped out, sometimes repeatedly, during the starting period. This difficulty was finally overcome by setting up the overload relay so that it would hold in for starting but what happened to the running overload protection? The motor could have burned out completely without tripping the starter.

All of this naturally brings up the question of what is adequate and complete motor protection. The brief answer is that such protection will allow the motor to carry its normal cycle of duty but trip out if, for any reason, the temperature becomes too high. What could be a more direct means of approach than to use the motor itself as a heater to operate a thermostat which will stop the motor when the temperature reaches a dangerous point?

Recent developments have made possible such protection. Mounted on the active material of the motor is a small disc thermostat which works in connection with the usual form of starter. Dangerous temperature on the motor operates the thermostat and stops the motor.

The combination of overload relay and thermostat provides protection not approached in any other way. The overload relay is a necessary part of the protective system to guard against conditions such as stalling or failure to start. If, for instance, the motor failed to start, the large current would heat the copper and insulation to a dangerous temperature before the heat could flow to the thermostat. The usual form of overload relay affords protection in this condition but it may be noted that the relay may be adjusted to a relatively high value of current to provide for heavy starting duty.

The other hazards such as overload, phase failure, frequent starting duty, intermittent peak load, high room temperature and lack of ventilation (clogged air passages) results in a more or less gradual rise of motor temperature. The thermostat on the motor protects against any or all of these.

This system of motor protection is similar to the sprinkler system of fire protection with which all textile men are familiar. There is an ever present, automatic watchman, at the place where trouble may occur.

What does this type of protection mean? It means first of all protection against loss of production due to uncontrolled factors, which affects motors. It means reduced repair and maintenance cost. It means the ability to utilize the full capacity of motor equipment without fear of damage. In short, service at less cost.

# CURRENT TEXTILE TOPICS. . . .

## Talk of the Month

SPRING and summer have brought to the cotton industry a bowl of good cheer, mixed with a fair portion of uncertainty as a healthy check to over-optimism. Whatever the outcome of the new "partnership", the industry on July 17 was launched on a definitely changed course and broken away irrevocably from the old era of untrammelled individuality. The uncertainty attendant upon departure from the old course, however, is not an individual concern and in addition the new deal puts to an end a curse of the past in untrammelled competition. The partnership with the Government is for a definitely stated time, but it already has demonstrated what leaders of the cotton industry long ago asserted: Industry must regulate itself, or it will be regulated from without. Therefore, we venture to say that the day of ruthless competition is ended.

### The General Situation in Textile Markets

Under the emergency dispensation, the cotton manufacturer will not be without his problems. Simultaneous with his signing of the code, President Roosevelt signified some of the problems of adjustment in wage differentials, salaries for office help, regulation of work, etc., while at the same time it must be remembered that the code remains open to amendment. Concurrently, too, there has arisen the danger of foreign competition, with Japan making a serious threat upon our markets. In this last problem, however, the Administration must bear the burden for the industry by reason of creating the conditions which make necessary new protection for domestic manufacturers against competition from cheap foreign labor.

But it is not in the nature of manufacturers to shy at problems. What the industry wants is a chance to work for a reasonable reward. Problems are the ordinary lot of industry as of the individual, these being borne complacently if the solution brings its compensation. The Administration has created new conditions for industry and for other departments of our economic life. The initial impetus toward restored prosperity given by the Government last spring has had its recent reflection in the cotton industry in a month of the heaviest activity on record, according to the New York Cotton Exchange Service. The test of the ramified inflation, or recovery, program of the Administration now lies in fall buying which will measure the gain of mass purchasing power.

From the fundamental standpoint of mill operation in accordance with the requirements, if they were the only consideration, it would easily be granted that the Industrial Recovery Act is a step of progress. Even in the matter of wages, the Government program is merely an extension of what the leaders of the textile industry have favored voluntarily. It was not at all surprising that the Government, under the circumstances, found the cotton industry so ready to adopt a workable code. But the unreadiness of other industries to act with the same promptness was one of the immediate problems, along with such matters as the forces let loose for inflation of values in all directions, at the same time the need to reconcile these advances with checking a rise beyond the consumer purchasing capacity.

Emergency measures of the Administration right after the inauguration in March started industry on the highroad toward natural recovery from the depression. It was perfectly logical that, so soon as buyers saw an end to deflation, they should begin to take advantage of low prices for raw material and finished goods to purchase heavily. They not only had decreased inventories to the limit and faced consumers who had not bought for years in reasonable volume: they also saw a chance to restore stocks and give themselves something as good as gold.

Then came the legislation which created the Industrial Recovery Act and, while it did not affect the operation of the industry directly until July 17, it created problems of pricing because sellers were forced to estimate conditions that they had never faced before and costs thereunder were a matter of pure conjecture. However, it was possible to do business on a short-time basis and this reached a volume which, as stated above, caused mill operations to reach unprecedented heights, with consequent profitable business that mitigated any of the anxieties incident to control developments.

For the next few months, the industry will continue to face problems of adjustment and it will still be a case of trying to forecast conditions for which there is no precedent. Gradually the question will develop whether the control is working out well and how permanent will be its various features. In the depression undoubtedly the cotton, or any other, industry could have been run temporarily on a 40-hour or shorter basis to advantage. In the long run the problem is to find what length of week is logical.

Government has stepped into the picture as a partner. It is the joint responsibility of manufacturers and the Government to study the problem for the permanent future from the scientific standpoint of operations on a basis that will adjust the supply to demand; not by an artificially created week suitable to an emergency and a stop-gap proposition, of most value because it kills the inordinately long schedules of a ruinous era.

SINCE the South became paramount in cotton manufacture it has been said that New England could hope to get a fair share of the business in

cotton products only when the industry was running at a high rate. Since the talk of a code for the industry under the National Industrial Recovery Act become prominent, followed by the inauguration of the new basis of operation for the mills, there has been a restoration of faith in the outlook for this district to secure again a fair proportion of the business at all times.

**New England Mill Situation**

This summer has brought a demonstration of the fact that a large business even under the old conditions of operation would mean real activity for New England mills. The heavy turnover of yarns and fabrics from cotton through the spring, with its resultant consumption of the raw material in June on a monthly rate never before recorded by the Census Bureau (which has been keeping the record since 1912) was accompanied by a heavy volume of activity in the mills of New England.

What the future will do for this section, under the new code, may not be predictable but there is a general wave of confidence for permanently better conditions. The mills were quick to lay plans for operating under the new schedules, though at the inception of the emergency period Massachusetts was beset with the problem of either modifying its law against work for women after six o'clock or of continuing to keep its cotton factories at a disadvantage in competition with the rest of the manufacturing states.

Mid-July figures of the Government on cotton consumption were accompanied by the report that 7,242,362 spindles were active in the New England States during June, compared with 4,569,172 for the same month last year. These figures bore indirect testimony to the re-opening of many mills, which indeed had been reported in the news for many weeks. On the strength of the normal reaction from extreme liquidation through the depression, the spring caused astonishing transformation in the situation in New England. An enumeration of the mill expansions, embracing the re-opening of large numbers of plants that had been idle for months and years, would occupy much space and a broad statement in such a general movement serves the purpose.

At the time of this writing the project for modification of the restriction on women working after six p.m. was undecided, but it was significant that the leaders of organized labor were heartily in favor of the change. Ernest N. Hood, president of the National Association of Cotton Manufacturers, expressed a prevailing sentiment of the northern section in the middle of the summer, when he said that cotton mills of New England under the Industrial Recovery Act would have their best opportunity in more than twelve years to obtain their share of the business of the industry at large.

From Maine, New Hampshire, Rhode Island and Connecticut, as well as the mill centers of Massachusetts, preparations were under way long before July 17 for adjustments to the new work week and the double shift. Employment showed rapid expansion from the beginning of the summer, moreover, on the basis of the large business in hand. A striking example of the transformation in Fall River was the statement that the Barnard plant had increased its operation nearly 900 per cent compared with the rate a year ago. This of course reflected the stagnation of the famous community in cotton manufacture at the depth of the depression, yet such a gain also means a healthy return of business.

New Bedford has profited from a recrudescence of business in the fine fabrics for which it has long held distinction. Through the depression, when quality was so far subverted to price, the mills worked to uphold their reputation for fine goods and now they hope and expect to reap the reward of such policy. The statistics of cotton shipments into New England show New Bedford holding a long lead. In May, for example, the receipts at that city were more than half the total for the five leading communities of New England in cotton manufacture. The other cities are Fall River, Lowell, Lawrence and Manchester.

As early as June the manufacturers of New England were looking into the matter of securing the necessary additional help to take care of a large business and to accommodate the mills to the new schedules. There was even competition among mills for skilled workers, though mixed reports were forthcoming on the existence or non-existence of a shortage of labor. In centers of concentrated manufacture for many generations, there was felt to be a good reserve, even after the long period in which workers had had a chance to drift.

Among the other matters connected with the adjustment had been the need of balancing departments of plants. Where one department was not equipped to keep pace with another under restriction to two shifts, a re-equipping has been found necessary. The effect of this has been noticeable not only in a scramble for second-hand machinery but a material advance in the prices therefor.

## COMMENT ON THE COTTON MARKET

**New Orleans, July 14th, 1933.**

As is generally known the cotton market, except for temporary reactions, remained on the upgrade the past month, and values scored a further big advance of about $12.40 per bale, Middling in New Orleans today being quoted at 11.55 versus 9.07 about one month ago. Numerous constructive developments contributed to the big advance, but the principal factor was the success of the government's cotton acreage reduction campaign, which closed at midnight of the 12th.

While the "drive" for a large reduction in the acreage was in progress there developed a good demand for contracts, for spots and for cotton goods. The strength of the grain markets, due to unfavorable weather, extremely bullish government crop estimates as to wheat, corn and oats, and the reported provisional agreement as to acreage control, etc., by the leading wheat producing countries of the world, had much influence on values, as did the inflationary movement of the dollar in its relation to the franc and pound.

As was to be expected the increasing purchasing power of the West and the South, the result of the much better prices for grain and cotton, and because of credit exten-

sion, made for greater activity in general business, as reflected in recent favorable returns covering electric power consumption, carloadings, the larger increasing of bookings by the U. S. Steel Corp., the activity in the automobile industry, and a June domestic consumption of lint cotton that broke all previous records for any month, in any previous year.

**BRITISH BOARD OF TRADE REPORT FOR JUNE.**

| Year— | 1933 | 1932 |
|---|---|---|
| Exports of yarn, pounds | 11,000 000 | 10,000,000 |
| Exports of cloth, yards | 142,000,000 | 185,000,000 |

The British textile trade returns, covering exports, was not up to expectations, but may improve in the future, as London advised recently that a world price raising program was understood to be under consideration recently by the British dominions for the World Economic Conference, which makes it appear as though the Roosevelt policy for higher prices and business recovery may become world-wide in scope.

**CENSUS BUREAU REPORT FOR JUNE.**

| United States—Bales— | This season | Last season |
|---|---|---|
| Consumption of lint, June | 696,472 | 322,706 |
| Consumption of lint, 11 months | 5,535,382 | 4,587,448 |
| Mill stocks, June 30th | 1,400,804 | 1,320,703 |
| Stocks in mills, public storage and warehouse, June 30th | 7,719,748 | 8,471,640 |
| Active spindles during June | 25,540,504 | 20,646,966 |
| Active spindles during May | 24.571.498 | 21.633,036 |

**WORLD'S VISIBLE SUPPLY OF COTTON TODAY**

| Bales— | This year | Last year |
|---|---|---|
| American | 7,045,000 | 7,409,000 |
| Other kinds | 1,864,000 | 1,950,000 |
| All kinds | 8,909,000 | 9,359,000 |

**ESTIMATED WORLD'S CONSUMPTION OF LINT COTTON, IN BALES.**

| | This season | Last season |
|---|---|---|
| American, during May | 1,284,000 | 1,045,000 |
| All kinds, during May | 2,212,000 | 1,854 000 |
| American, for 10 months | 11,555,000 | 10,526,000 |
| All kinds, for 10 months | 20,401,000 | 19,457,000 |

Recently it was estimated that the world's consumption of American for the whole of this season would likely be about 13,800,000 to 14,000,000 bales. These figures may be revised upward owing to the record June domestic consumption.

Consumption may continue large next season because of the larger buying power to come of the higher prices for farm products and owing to increasing employment and higher wages to be paid labor in mill and factory in the industrial sections of the country and in many other lines of trade.

As to this year's acreage, according to the government a total of 40,798,000 acres was in cultivation on July 1st, against 36,542,000 on corresponding date last year. But the acreage reduction campaign was a success, which means that a large portion of this year's acreage will be retired, perhaps nine million acres or more. According to Secretary of Agriculture Wallace enough growers had agreed to cut their acreage sufficient to reduce this year's potential crop by about 3,500,000 bales. The tentative goal, it is said, had been set at 3,000,000 bales. Accordingly the processing tax of 4.2 cents a pound on cotton goes into effect August 1st.

At the same time a compensatory import tax equal to the processing tax will go into effect to put importations of cotton on the same basis as the domestic product. Taxes will be levied also on the processing of competing products, including rayon and silk and probably wool, linen and other materials to prevent the cotton tax from providing a special handicap to its sale and consumption.

**TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES.**

| Year— | 1933 | 1932 | 1931 | 1930 | Normal |
|---|---|---|---|---|---|
| For June | 0.78 | 3.05 | 2.01 | 2.14 | 3.20 |
| November to June, inclusive | 16.32 | 23.96 | 19.69 | 19.10 | 20.27 |

If nine million acres of this year's planted acreage is ploughed up, this year's revised acreage would be about 31,798,000 acres, which would be the smallest acreage in cotton since 1921 when the acreage was 31,678,000 acres. No one knows at this time what size this year's crop will be because of the prospective much smaller acreage and owing to so much depending upon future weather conditions and doings of insects. Therefore, except for argument's sake, it is premature to figure on a crop that is still in the making.

Recently the drought in Oklahoma was reported to be one of the worst of record, and the average rainfall for June in Texas was the lightest for more than forty years. In early weeks rain was said to be needed over much of the belt, especially in Oklahoma and in many districts of Texas. Meanwhile there were good and rather general rains in much of the central belt, in parts of the eastern belt there were showers, as well as over much of Oklahoma and parts of Texas, with the present outlook favorable for further relief in the immediate future. Because of the recent abnormally higher temperatures, a general, generous rain would undoubtedly be of much benefit to the dry areas and other sections of the belt where insufficient moisture was had.

The recent hot, dry weather is supposed to have held the weevil in check, as complaints are few and far between.

It is probable that the government will issue its first cotton crop forecast of the season on August 8th.

New York advises that trading in primary cotton textile markets has been very light of late, due to uncertainties connected with the national industry recovery act, and that it is not possible to estimate future cotton goods costs, and prices are being withheld. Much the same conditions exist, it is said, in other divisions and will continue until codes are approved and production costs can be computed. Where asking prices are named at all, buyers are resisting them, and it is difficult to reach a trading basis at present.

## WHAT THE SOUTHERN MILLS ARE DOING . .

With the resumption of activity of a number of mills which have been idle for varying periods of time, southern textile manufacturing during the past month or so again assumed near-capacity operation. These start-ups came partly as a result of the conditions prescribed by the National Industrial Recovery Act, and an increase in demand for goods which followed. There were at the same time numerous instances of improvement, replacement, and, in some cases, the establishment of new concerns.

Washington Mills, Fries, Va., were installing 113 new frames of Whitin-Casablancas long draft spinning, and work is going forward on the installation of motors throughout the plant, for operation on electric power. A new Westinghouse generator, and three units of Barber-Colman automatic spoolers and super-speed warpers, have also been installed.

New equipment recently installed at the Lancaster (S. C.) Cotton Mills includes 20 single process pickers, additional cards, 12,000 Saco-Lowell spindles, bunchless automatic cleaners, and shearing machines. The company has also installed a Barber-Colman automatic spooler at Mill No. 2 of the Fort Mill (S. C.) division.

Central Falls Mfg. Co., Central Falls, N. C., have installed 200 new Draper automatic shuttle-changing looms, used in the manufacture of all-rayon goods.

H. & B. American Machine Company is installing 73 new long draft spinning frames at the West Point Manufacturing Company's plants; 39 frames are being changed over at Lanett, and several long draft frames are being installed at Langdale.

Erwin Cotton Mills Company, Durham, N. C., has placed order with Waltham Watch Company for the installation of 5,400 double-shift pick counters on looms in a number of the company's plants.

Majestic Silk Mills, Inc., Allentown, Pa., have purchased the Buena Vista Textile Corp., Buena Vista, Va., and are repairing the machinery and constructing a 60x100-foot addition.

Contract for the construction of 30 new houses in the mill village of the Clark Thread Company of Georgia, Austell, Ga., was awarded to Townsend Lumber Company, of Anderson, S. C.

An addition, 100x100 feet, is being erected by the Lowell Bleachery at its plant at Experiment, Ga., just outside of Griffin.

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Chattanooga, Tenn.
Mills & Lupton Supply Co.
Columbia, S. C.
Tidewater Supply Co.
Corsicana, Tex.
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Eldorado F'dry & Mach. Sup. Co.
Gastonia, N. C.
Gastonia Supply Co.
Harlan, Ky.
McComb Supply Co.
Hopkinsville, Ky.
Cayce Mill Supply Co.
Houston, Tex.
Rose Hoskins Supply Co.
Jackson, Miss.
Mississippi Foundry & Mach. Co.
Jellico, Tenn.
McComb Supply Co.
Kansas City, Mo.
Gustin Bacon Mfg. Co.
Laurel, Miss.
Laurel Mach. & Foundry Co.
Macon, Ga.
Taylor Iron Works & Supply Co.
Miami, Fla.
Railey-Milam Co.
Nashville, Tenn.
John Bouchard Sons Co.
New Orleans, La.
C. T. Patterson Co. Inc.
Stauffer-Eshleman Co., Ltd.
Norfolk, Va.
Tidewater Supply Co.
Oklahoma City, Okla.
Allied Equipment Co.
Owensboro, Ky.
Wright Machine Co.
Paducah, Ky.
Henry A. Petter Supply Co.
Pensacola, Fla.
Pensacola Tool & Supply Corp.
Phoenix, Ariz.
O. S. Stapley Hdwe. Co.
Picher, Okla.
Consolidated Mine Supply Co.
Pittsburg, Kans.
General Machine and Supply Co.
Plainview, Texas
Asher Supply Co.
Rome, Ga.
Battey Machine Co.
St. Joseph, Mo.
Missouri Water & Steam Sup. Co.
Salisbury, Md.
R. D. Grier & Sons Co.
San Angelo, Tex.
Findlater Hdwe. Co.
Shreveport, La.
Superior Iron Works
Springfield, Mo.
Schweitzer Bros.
Sulphur, La.
Union Supply Co.
Tampa, Fla.
Knight & Wall Co.
Tulsa, Okla.
Gustin Bacon Mfg. Co.
Tyler, Tex.
Walter Connally Co.

THE GREATEST NAME IN RUBBER

A small addition to be used as a shipping department, and to cost approximately $10,000, has been erected by the Standard-Coosa-Thatcher Co. at its plant in Rossville, Ga.

Reidsville Rayon Mills, Reidsville, N. C., have been incorporated by J. Spencer Love, W. J. Carter and A. Glenn Holt to operate the Reidsville unit of Burlington Mills as a separate corporation.

Gaffney (S. C.) Manufacturing Company is installing 400 new looms for replacement.

An addition is being constructed at the Dixie Spinning Mills of Dixie Mercerizing Company, Chattanooga, Tenn., and it is understood 10,000 spindles will be installed.

Union Bleachery, Greenville, S. C., has awarded contract to Fiske-Carter Construction Company to construct a pipe line and reservoir.

A number of new houses are being erected in the village of the Pepperell Mfg. Co., at Lindale, Ga., to care for additional operatives required by double shift operation.

Lincolnton Spinners, Inc., is the firm which has taken over and placed in operation the Wampum Mill, Lincolnton, N. C. The mill has 14,064 spindles. Additional machinery and equipment will be installed.

An addition is being erected to the Rock Hill Printing & Finishing Company, Rock Hill, S. C.

A $35,000 addition to the boiler room at the Pacific Mills, Lyman, S. C., is being constructed. Gallivan Construction Company of Greenville has the contract.

W. A. Harris & Son, Burlington, N. C., manufacturers of men's fancy hosiery, have installed 15 new machines.

W. P. Elliott Knitting Mill, Marion, N. C., has started operations with 32 seamless knitting machines, 8 ribbers and 5 loopers.

Richmond Hosiery Mills, Daisy, Tenn., are installing 100 additional Banner split-foot 240-needle half-hose machines.

May Hosiery Mills, Burlington, N. C., have recently purchased about $80,000 worth of full-fashioned equipment for balancing the various production departments.

Stimpson Hosiery Mills, Statesville, N. C., have built an addition for use as a dyeroom and finishing department.

An addition, 35x38 feet, has been erected at the Grifland Hosiery Mills, Burlington, N. C., to be used for additional equipment.

Pioneer Hosiery Mills, Denton, N. C., have been organized by Fremont Mendenhall, of Thomasville, N. C., and Raymond McDonald, of Philadelphia, Pa.

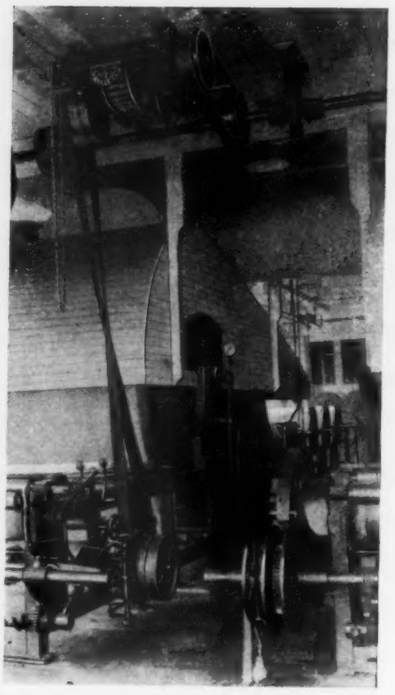
Adams-Millis Corp., of High Point, are building an addition to the plant in Kernersville, N. C., in which used equipment will be installed.

# Variable Speed Drive Applied to Slasher

THE application of a variable speed transmission on slashers in a large Georgia mill, to replace the step cone pulleys, is of general interest. It is generally recognized that proper drying depends to a large extent on the exact speed at which the warp is run over the slasher cylinders. Improper or uneven drying of the warp affects the running conditions at the loom, and also the weight of the goods in the cloth room and impairs the quality of the woven cloth. The importance of care being exercised at the slasher is increased because of the part which the human element plays in the handling of the yarn in the slasher room. The application of the variable speed transmission, as illustrated in the accompanying photograph, is designed to provide a uniform drying speed, with no slippage, in order to add this advantage to those received from instruments for regulating the temperature of the cylinders and for determining the depth of the solution in the size box, etc. The equipment used is the Reeves variable speed transmission, which has been widely employed for many years on machinery in both the fabricating and finishing ends of the industry.

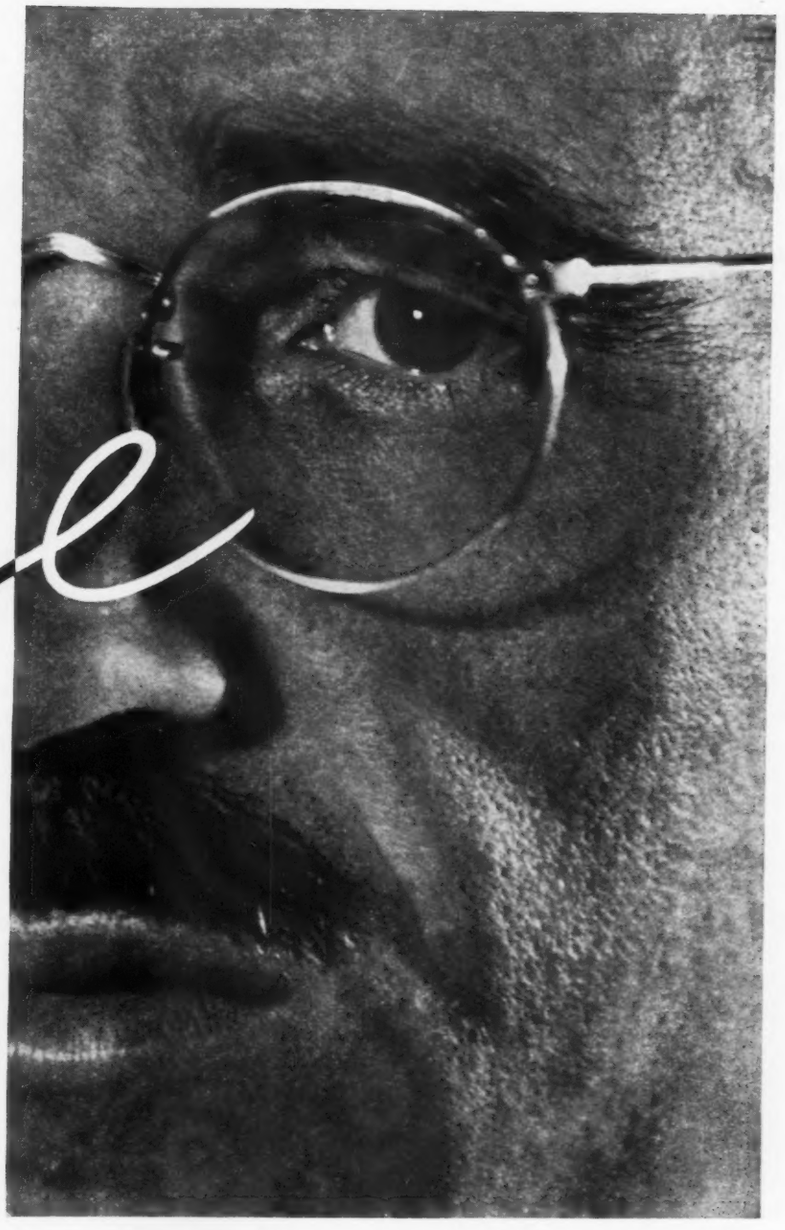
The use of the speed control, placing the control of the speed at the operator's finger-tips, makes it convenient for him to regulate the transmission as required. A convenient speed indicator can be installed to show the exact yardage per minute that the yarn travels.

The transmission of 3:1 ratio of speed range is used for slashers of ordinary width. The speed control unit can be located conveniently on the ceiling or floor or in any other desired position and driven from line shaft or individual motor. The illustration shows a ceiling installation, the constant speed shaft of the transmission being driven from a line shaft. From the variable speed shaft of the transmission, the belt drives to a set of three pulleys on the main shaft of the slasher. These pulleys consist of an inside pulley which is loose, a center pulley geared to a set of speed reducing gears, and an outside pulley, keyed to the main drive shaft. The transmission provides a 3:1 ratio of speed range. A typical range may be from 50 to 150 yards per minute. When extremely slow speed is required, the belt may be shifted to the middle pulley on the drive shaft of the slasher, this pulley being geared to a speed reducer, as explained, and running the slasher at a speed of approximately three-quarters of a yard a minute, without in any way affecting the recommended minimum speed of the transmission, since the pulley on the variable speed shaft of the transmission is as wide as the set of three on the drive shaft of the slasher.



Variable speed slasher

# IS YOUR *Eye* FIXED ON COSTS?



## *Consider this 60% saving on roll coverings . .*

HOW much do you spend on roll coverings in a year? How would you like to save as much as 60% of that sum?

Not one single mill that has switched to Armstrong's Seamless Cork Cots has failed to show a substantial saving—often it's *more* than 60%! Here's an actual case: Roll covering cost was reduced from $24.84 to $8.77 per million spindle hours. This same mill is getting an average life of 15,187 spindle hours out of cork cots on the front line as compared with 2,465 spindle hours for the ordinary covering.

But economy isn't their only advantage. Many mills tell us that Armstrong's Seamless Cork Cots produce stronger, more even yarn. Cork's uniform drafting surface, free from seams, runs longer between buffings. Cork cots are less affected by humidity and hard ends. Lap-ups are greatly reduced. There is less clearer waste —eyebrows are practically eliminated.

Today more than six million spindles are on cork—and the number is fast increasing. Results gathered from mill production records will be sent gladly. Write Armstrong Cork & Insulation Co., 923 Arch St., Lancaster, Pa.

## *Armstrong's* SEAMLESS *Cork Cots*

***For Spinning and Card Room Rolls***

# NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

## Atwood Uni-Twist Belting

Atwood Machine Company, Stonington, Conn., has introduced a new development in spinner belts in their Uni-Twist belting. The lapless endless Uni-Twist belting is recommended for Monarch twisters and the Uni-Twist is recommended for Atwood B and BH single deck twisters, C and 9C double deck twisters, and 5B doubler twisters. The Uni-Twist belting is made of a strong, tightly woven fabric, with uniform thickness from end to end. Uni-Twist belts are supplied lapless endless, which means that a single length of fabric many times the length of the belt but wound around like a bandage and cemented together into a single integral unit belt is used. These are made in exact lengths for the machines for which they are required and are carried in stock for all common lengths. The manufacturers point out that, "These belts run with minimum vibration, are almost stretchless, and are used with less tension, with a saving in power and less load on bearings. Lapping difficulties are entirely eliminated."

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## New Unbreakable Rubber Pot Eye

Parock, a specially compounded rubber material developed by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., is now being used in the manufacture of pot eyes, which, it is pointed

New pot-eye

out, are practically unbreakable. The manufacturers explain that, "the Parock material takes a high polish which it retains permanently. Pot eyes of this material wear indefinitely, do not oxidize or deteriorate due to age, and are unaffected by dyeing and bleaching solutions. They are tan color and are furnished in all sizes from 2½-inch to 15-inch diameter."

## Catalog of Denman Loom Parts

The Denman Tire and Rubber Co., Warren, Ohio, has prepared and is distributing a new catalog of their loom parts, for all makes of looms, including pickers, hold-ups, bumpers, bunters, etc. The information is prepared in a convenient way for reference and use, with specifications of each part being given, and illustrations of the various parts. The Terrell Machine Co., Box 1047, Charlotte, N. C., is the southern sales agent for these Denman products.

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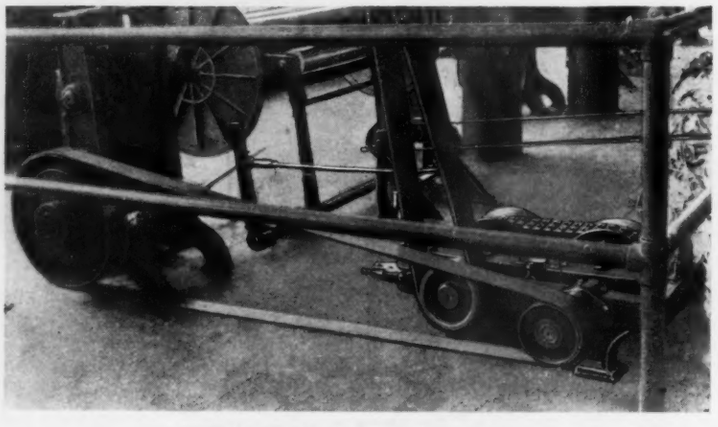
## Variable Speed Control on Long Chain Beamer

The application of variable speed transmission with mechanical automatic control to a long chain beamer is of interest. The application was made by the Reeves Pulley Company, and the accompanying illustration is of an installation in a Georgia textile plant.

In this process, yarn delivered from the drying process following dyeing or mercerizing or both, is known as a chain warp, and consists of a number of threads in rope form, of predetermined length and coiled to save floor space. This yarn is wound then on a section beam or spool for further processing. The filling of these section beams is performed by the long chain beamer, which consists of several sets of gears driven from a line shaft or other source of power. The beamer distributes the yarn from the chain warp over the entire width of the section beam. In order to insure uniform density or thickness throughout the beam, a certain amount of tension is placed on the yarn during the beaming operation.



Variable speed on long chain beamer

The manufacturers point out that the use of the Reeves transmission here maintains constant speed of yarn travel and uniform tension on the yarn as the beam builds up in diameter; that since the tension is uniform, the machine can be started at high speed and the maximum production rate soon reached and maintained.

The extended lever of the variable speed transmission with mechanical automatic control is connected to a follower roll which rests lightly on the beam and maintains uniform tension. As the beam builds up in diameter, movement of the follower roll actuates the extended lever of the transmission, reducing the speed of the transmission as required. Through the decrease in the time required for making a beam, a 37 per cent increase in production is cited.

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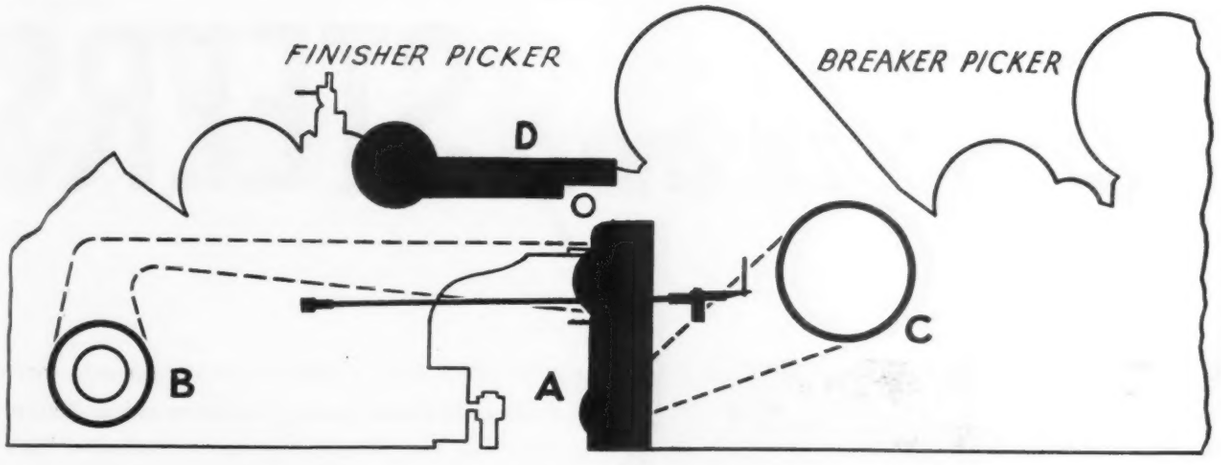
## Mundet Cork Bulletin

The latest cork pipe covering price bulletin of Mundet Cork Corporation, 450 Seventh Avenue, New York City, has been issued, dated June 1, 1933. In addition to prices the bulletin contains valuable engineering information on insulation, specifications, how to install when pipes are too close together for regular covering, how to order, and data on Mundet sundries for cork pipe covering. It contains 16 pages with cover.

## New 2-Inch Indicating Gauge

The Foxboro Company, Foxboro, Mass., have developed a small size indicating gauge with a full length 270-degree scale, which, they point out, is presented in answer to a demand for a guaranteed gauge of this type. It is a 2-inch gauge, so designed that it uses a full length Bourdon spring which results in a reduction in movement multiplication and an increase in accuracy. It is known as Model DH and is furnished in a drawn brass case and ring with buffed nickel finish; buffed brass or chromium finish can also be supplied. The connection may be either




# SACO-LOWELL MODEL B-5
# *Coordinated* Picker Change-over

## *Change over to One-process Picking NOW — it costs remarkably little!*

FOR the first time, a genuine one-process picker change-over is offered to textile mills. The Model B-5 was developed by Saco-Lowell engineers thoroughly familiar with picker design and principles and who understand the capacities and limitations of the various parts of the machine.

The Change-over consists of four simple parts. A, the Cone Panel Drive, shipped completely assembled. B, the Fan Drive which drives the top auxiliary cone in A. C, the Breaker Drive which coordinates the stopping and starting of both units and causes the feed rolls of both to operate identically. D, new Apron Rail. A summary of its features follows:

(1) Correct in principle and design—there are no parts to wear or break and cause inconveniences.

(2) Simple in construction and positive in operation.

(3) Easy to apply—the auxiliary cone panel drive is shipped completely assembled. None of the old calender gearing is used.

(4) Inexpensive—few parts and novel design permit it to be installed at low cost.

(5) The breaker and finisher are synchronized—to change the rate of production without changing the weight per yard of the lap, it is only necessary to change one feed pulley. No other change is required.

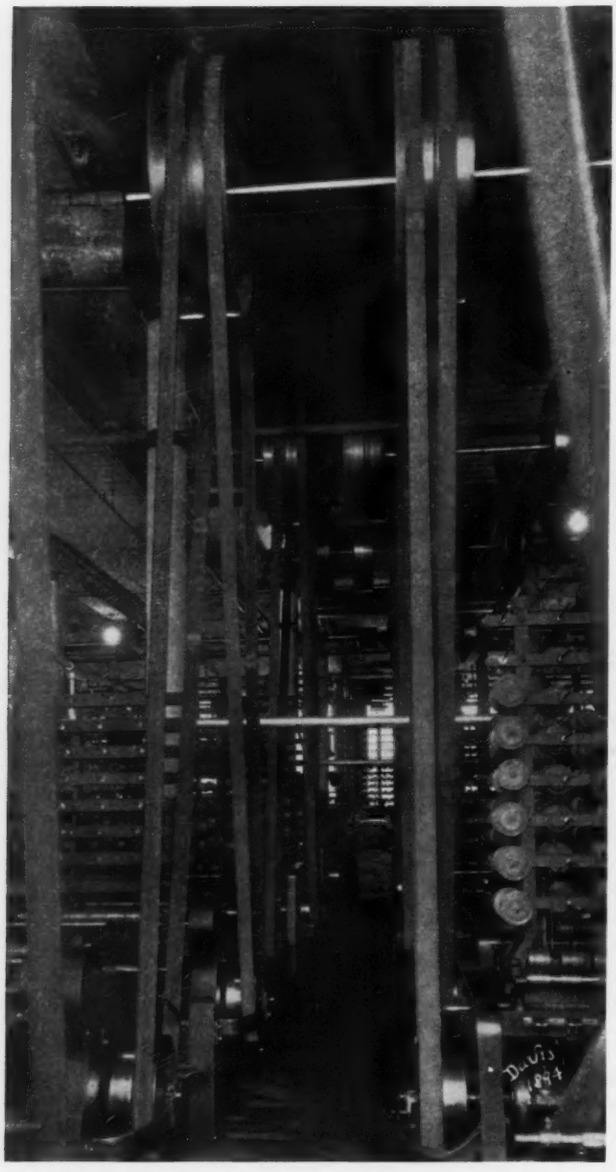
The B-5 produces REAL one-process picker results. You need not continue to run old 2- or 3-process picking when a small investment will give you the advantages of modern one-process operation.

## SACO-LOWELL SHOPS

147 MILK STREET, BOSTON, MASSACHUSETTS

CHARLOTTE, N. C. GREENVILLE, S. C. ATLANTA, GA.

# *are there any* STEERS



*WHITIN FORMING TWISTER—4" GAUGE —Line shaft drive with large driving pulleys. Equipped with Goodrich Belting, put on in 1930 and still in good running condition. Fastened with wire lacing.*

**CONSIDER THE CASE of a cotton manufacturer who, all these years, has been using leather belting. He doesn't raise any steers in his own back yard, but he buys the hides from their backs in the form of belts for his machinery — disregarding the fact that the product of his own industry provides 60% of the raw material out of which rubber and fabric belts are made; disregarding the fact that these belts would serve him better and cheaper.**

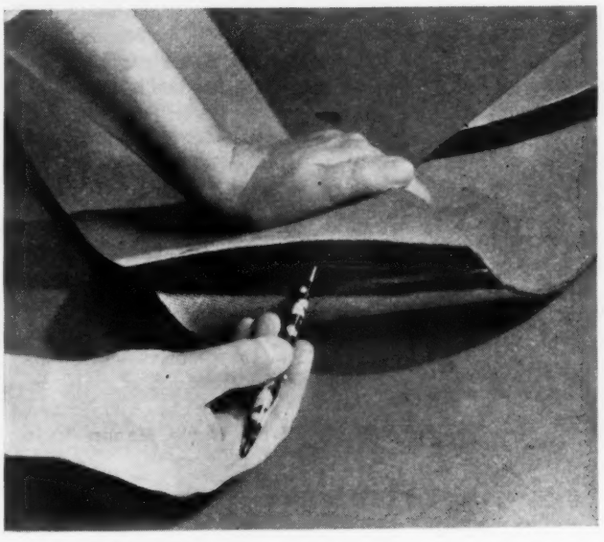
**True enough the early attempts to use rubber and fabric belts on cotton mill drives had failed. Tradition counselled it was only natural that they should fail. After all, didn't the humidity so necessary for mill processes shrink cotton fabric? And didn't shrinking cause these belts to break and pull out fasteners and interrupt the even flow of steady and efficient operation? Tradition said they were no good — even if they were made of his own product; and Tradition was the child of experience that could not be gainsaid.**

**But after a while, Progress stepped in. Certain progressive operators recognized that study of the problem might make it possible to *apply* rubber and fabric belts in such a way as to yield genuine benefits from their use, to create a new market for their own products. As manufacturers of rubber and fabric belts and pioneers in their application to many another industry, Goodrich tackled the problem too — designed a belt that would insure positive control of elasticity and stretch, compounded a rubber that would give maximum flexibility and long life, designed a duck better balanced**

# Goodrich

# In Your Back Yard?

to meet the conditions, and produced a belt that was custom-made for cotton mills. Here at last was a belt that would not relax under tension, that could be made endless in the mill as well as for practical use with fasteners. Then, to fit the requirements of cotton mill service, Goodrich Application Engineers *discovered what keeps rubber and fabric belts from shrinking on the job.*



*SPLICING HIGHFLEX JR. IN THE MILL— Highflex Jr. Belt perfectly spliced in the mill. Belt is shown bent sharply back on itself placing outer seam of splice in severe tension, to demonstrate that there is no opening or hinge point at the outer seam.*

Today Goodrich Highflex Jr. Transmission Belting, as it is called—on thousands of drives—is proving its worth to cotton mill men. When properly applied, it maintains its original tension, is practically free from stretch—no flapping, no weaving back and forth or running off pulleys; and insures smoother, sweeter all-around operation. Moreover, Highflex Jr. costs substantially less to buy and is more economical to maintain than the leather belts which so long have been standard equipment.

Goodrich distributors know how to apply rubber and fabric belts. They know how and are equipped to make them endless in the mill. They would welcome the chance in *your* mill to support these claims—for belting that defies tradition, that has revolutionized power transmission practice in the textile industry. Get in touch with the Goodrich distributor nearest you and ask for a demonstration; or write to... The B. F. Goodrich Rubber Company, Mechanical Rubber Goods Division, Akron, Ohio.

•

**GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:**

- *Transmission Belting*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

**ALL** *products problems* **IN RUBBER**

*Highflex Jr. Belting*

top, bottom, left or right side. The plain tapered pointer, standard on Foxboro indicators since 1919, is used. Any range from 0-15 pounds per square inch to 0-300 pounds per square inch, as well as 0-30-inch mercury vacuum, is available.

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## New Conditioning Material

Borne Scrymser Co., 17 Battery Place, New York City, announce the development of a product known as Meon, to be used for the conditioning of cotton yarn in the conditioning machines. The company explains that one gallon of this product will condition about 15,000 pounds of filling yarn for weaving purposes. One gallon is added to 99 gallons of cold water and the product can be used in any type of machine, it is stated. It may also be used, the company states, instead of steam in the older form of conditioning room, by mixing with cold water and blowing the fluid through an atomizing head into the atmosphere of the room. The manufacturers state that this product does not require the use of rust-proof bobbin rings, but prevents rust formation and protects all metal parts of the conditioning machine.

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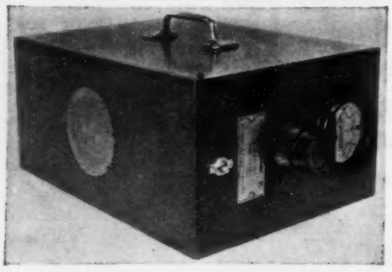
## Photo-Electric Color Matcher

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., have developed a photo-electric color matcher of a portable type. It is arranged to compare samples at three points of the visible spectrum indicating whether two samples are matched. It does not analyze samples into the respective constituents. The color matcher is especially valuable for the following applications: Sample painted and lacquered paddles can be tested with great accuracy or a standard paddle can be compared with finished wall of a house with equal accuracy. Differences in porcelain and enamel tiles hardly discernible to the eye can be segregated by the color matcher with little difficulty. It is especially good for comparing white tile, the most difficult of all color tile problems. Its value in the field of printing and lithography is indispensable for paper stocks and inks. It can also be used for matching dyes, pastes, food, coffee, etc.

The construction of the color matcher permits its use in any position. In general, it is intended to be placed on the samples to be compared or its position reversed so that samples may be placed on the aperture for comparison. Light weight and a long flexible extension cord permit adjustments in its position is required.

Either light or dark samples may be tested, the sensitivity of the unit allowing the matching of even very black surfaces. On the other hand, the range of operation is such that very brilliantly colored surfaces are within the range of the instrument. Condition of surface, dull or bright, does not affect the color matcher.

The power supply is operated entirely from a 110-115 volt, 60 cycle source, no batteries whatever are required though they may be substituted if desired. A rectifier tube and filter circuit provide plate and grid voltages for the matching circuit. The matching circuit consists of a low grid current



Color matcher

amplifier tube, photo-tube, coupling circuit and sensitivity control. A sensitivity meter is provided for reading from 0 to 20 with the number 10 appearing in the center of the scale.

The optical system is independent of daylight or external artificial light. It is made up of four major parts, the lamp, a set of color filters, a lens and mirror, and an integrating chamber. The phototube is the common unit between the optical and electrical systems. The lamp is the standard concentrated filament type and is run at low voltage to insure long life. The three-color light filter permits comparison at separate color points, namely, blue, green and red. These three represent the short, medium and long wave lengths in the visual spectrum. The lens and mirror bring the light rays to the sample, and the white, integrating chamber brings the rays to the photo-tube, which has a color characteristic to give excellent operation with the lamp source.

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## Reclosing Device for Oil Circuit Breakers

An inexpensive, direct-acting reclosing device, designated as type SM has been developed by General Electric Company, Schenectady, N. Y., for use with oil circuit breakers. This attachment will reclose a break one, two, or three consecutive times, with equal time intervals between reclosures, when the breaker is tripped by overloading, it is pointed out. If the overload disappears after any reclosure, the attachment will return to its normal position and the breaker will remain closed. If the overload still exists after the last reclosure, the breaker will remain locked open and it will be necessary to close it manually before any further automatic operation takes place. The attachment is a mercury-tube device in which timing is obtained by running mercury through an orifice into a reclosing contact chamber. The tube has sealed-in contacts which do not deteriorate or require maintenance, it is pointed out. The attachment is directly connected to the breaker mechanism and is available with both solenoid and motor-operated breakers. It can be furnished with outdoor breakers and switch house equipments and also for use with indoor breakers which have various mountings such as pipe or angle iron framework and metal-enclosed.

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## Additional Personal Notes and Obituary Items

J. A. Toole has resigned his position as superintendent of The Montreal Cottons Limited, Valleyfield, Quebec, Canada, to take a similar position with Warwick Mills, West Warwick, R. I., beginning August 5th. Mr. Toole has been at Valleyfield for two and a half years, and immediately previous to this connection was general superintendent of the Pawtucket, R. I., plant of Manville Jenckes Company.

Charles H. Ross has become connected with Burlington Mills, Burlington, N. C., in charge of rayon and Jacquard weaving production. He was formerly vice-president and general manager of the Ranlo Manufacturing Co., Ranlo, N. C.

L. M. Saxon has resigned his position in the experimental department of the Perkins Hosiery Mills, Columbus, Ga., and has become general overseer of carding and spinning at the Dale Cotton Mills, Ozark, Ala.

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## Obituary

Joe D. Perry, sales representative of J. E. Rhoads & Sons, with southern office at 88 Forsyth St., S.W., Atlanta, Ga., was killed in an automobile accident on the evening of July 14th. The accident occurred at Garden City, Ala., on the Birmingham-Hanceville highway. Mr. Perry was returning from a trip in the East Tennessee territory to his home in Birmingham, Ala. The car in which he was riding was met head-on by a truck rounding a curve and passing another automobile. Mr. Perry's car was demolished, and his death instant. He had been connected with J. E. Rhoads & Sons for seven years, and had numerous friends throughout the southeastern textile field.

# TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

### Myers and Rankin are Receivers for Textiles, Inc.

A. G. Myers and R. Grady Rankin, of Gastonia, N. C., are the receivers for Textiles, Incorporated, the merger of some 15 combed yarn mills in and near Gaston County, which was placed in receivership on June 16th, "in order to finance increased operations in the various plants." Attorneys for the receivers pointed out that, "it was found after prolonged conferences between bank creditors, attorneys, and directors that the only way by which funds necessary to continue the operation of Textiles, Inc., could be secured was through a receivership, and subject to the orders and approval of the court, a plan has been worked out whereby certain bank creditors have agreed to supply, with the approval of the court, a sum of money which, in the opinion of the executives of the company and of the receivers, will insure the continued operation of the business without interruption."

Mr. Myers and Mr. Rankin, the receivers, were president and secretary-treasurer of Textiles, Incorporated. Three of the vice-presidents—J. H. Separk, C. C. Armstrong and J. Lander Gray—voluntarily resigned upon receivership. H. A. Florsheim, who was vice-president and sales manager, also resigned. A. W. Latta is in charge of sales.

Hampton Textiles, Inc., Gastonia, N. C., which is an affiliate, and Flint Mfg. Co., of Gastonia, and Textiles, Incorporated, of South Carolina, are not affected by the receivership.

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### Changes in Cyclone Fence Organization

J. H. Laughlin, of Atlanta, southeastern district manager of Cyclone Fence Company, announces the transfer of C. B. Shisler from Charlotte, N. C., to St. Louis, Mo. O. R. Brainard has replaced C. B. Shisler as representative of the company in North and South Carolina, with headquarters in Charlotte. Mr. Brainard has been with the Cyclone Fence Company for six years and is a seasoned and experienced sales engineer.

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### Textile Graduates of N. C. State All Placed

All of the graduates recently at the textile school of North Carolina have been placed in some position in the textile industry, it is announced. Of the 22 graduates, 17 are located in North Carolina, two in South Carolina, one each in Georgia, Tennessee and New York—employed in cotton manufacturing, fabric finishing, bleaching, dyeing, and rayon plants. It is reported also that a recent survey of the graduates of this school, more than 400 in number, shows that approximately three-fourths of all the graduates are in some phase of the textile industry. Eighty-two percent of the graduates from 1923 to 1933, and 94 per cent of the graduates from 1928 to 1933 are located in this industry.

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### Fisher Governor Announces New Representative

Fisher Governor Company, Marshalltown, Iowa, manufacturers of pump governors, pressure regulators, steam traps, liquid level controllers, strainers, and a complete line of similar automatic control devices, have announced the appointment of M. N. Dannenbaum Company, Shell Building, Houston, Texas, as the direct factory representative in southern and eastern Texas. M. N. Dannenbaum has made a visit at the Marshalltown factory where he completed a detailed study of Fisher equipment.

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### Frank Jones to Represent I. B. Williams & Sons

S. Frank Jones has been appointed representative in North Carolina for I. B. Williams & Sons, Dover, N. H., manufacturers of leather belting. His headquarters are the Johnston Building, Charlotte, N. C.

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### 11th Southern Textile Exposition, October 15th to 20th, 1934

Plans are under way for the 11th Southern Textile Exposition, the dates of which have been announced as October 15th to 20th, inclusive, 1934. Though the show is more than a year away, President W. G. Sirrine and Secretary Bertha M. Green are already taking reservations for space.

The bi-ennial show will be held, as usual, in Textile Hall, in Greenville, S. C. The management states that regular exhibitors will be given the positions usually occupied, if desired, where such allotments are practicable under the 1934 diagram and the rules of the exposition. All reservations will be made as soon as possible after applications in the order in which they are received.

Manufacturers of textile machinery, accessories, operating supplies, primary and fabricating materials and parts—and other products used in textile manufacturing—are invited to exhibit at the exposition.

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### Scholler Brothers Erecting New Plant

Scholler Bros., Inc., of Philadelphia, manufacturers of soaps, sulphonated oils, finishing compounds and specialties for the textile trade, have placed contract for a new warehouse and office building. It will occupy a full city block bounded by Westmoreland, Collins and Willard Sts., and Trenton Ave., located on the Pennsylvania Railroad.

The building will be of modern construction and contain a number of new features. Ceilings are to be 16-feet, with column spacing to fit storage requirements. Light will be obtained through a roof of self-cleaning skylights with large ventilators. Side walls are to be of brick with steel sash and glass. The entire building will be sprinkled using the dry system; and heated with a complete system of unit heaters using high pressure steam thermostatically controlled. Floors are to be of re-inforced concrete.

The exterior of the building is to be a rough texture red brick trimmed with limestone, set on a foundation of finished stone work. The office entrance is to be an ornamental limestone front, through a vestibule and waiting space. Spacious areas have been provided for general offices with six private offices and a general meeting room for salesmen. The executive quarters will be in the midst of records, sales, storage and shipping department. The present offices will be removed to the new location and the present manufacturing unit increased approximately 100 per cent.

The raw oil storage building at the new location will accommodate 250,000 gallons of storage of palm, castor and like oils and tallows. A siding to accommodate three car loadings, will permit receiving carload quantity in bulk of all oils, and facilitate carload shipments of finished goods. The tank rooms are to be high, well ventilated, with floors drained to gutters with ample washing facilities by steam and water. The raw products will be delivered direct from cars to tanks, and from storage tanks under Westmoreland St., diagonally to the present plant of Scholler Bros., Inc.

The plant is being constructed under the supervision of Wm. F. Lotz, of Philadelphia, well known in the full-fashioned hosiery industry.

# *Veeder-Root* ANNOUNCES

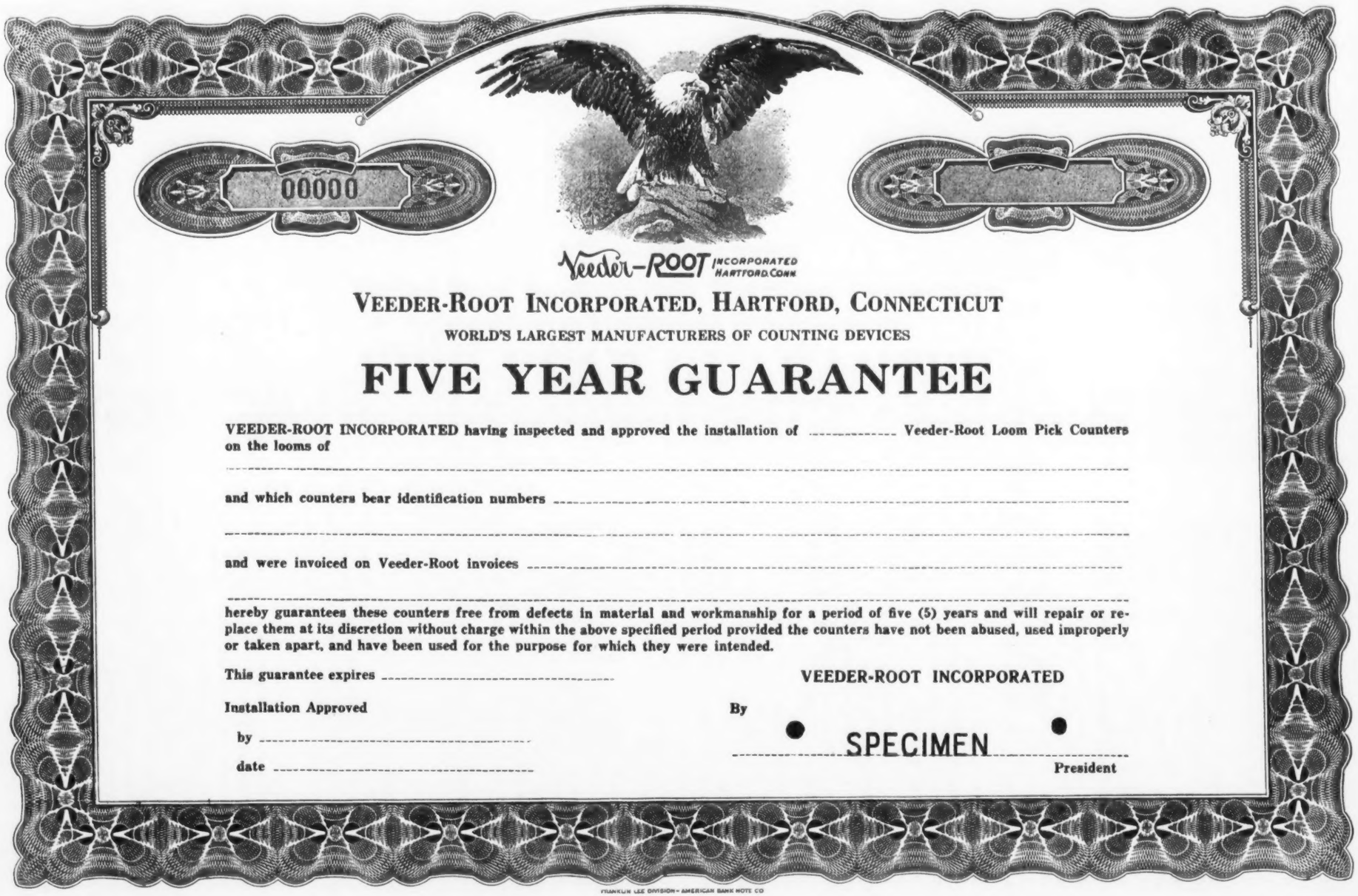
# *A* 5 *YEAR* GUARANTEE

From now on, a 5-year GUARANTEE goes with every new VEEDER-ROOT Pick Counter installed on your looms. . . This written Guarantee is reproduced on the opposite page. *Read it through.* It is your protection against any defects in materials or workmanship; your complete assurance of trouble-free performance. The first cost is the *only* cost of Veeder-Root Pick Counters. » » »

Behind this Guarantee — making it possible — are 45 years of designing and manufacturing Counters; 26 years' experience building Counters for textile machinery. More than 325,000 Veeder-Root Pick Counters *are now on looms:* — established evidence of performance. "First in USE; first in NUMBER in use; first with NEW FEATURES when such prove practical". . . Write today for further details. » » »

Veeder-ROOT
INCORPORATED

HARTFORD, CONN. . . SOUTHERN OFFICE, GREENVILLE, S. C.




## VEEDER-ROOT INCORPORATED, HARTFORD, CONNECTICUT

WORLD'S LARGEST MANUFACTURERS OF COUNTING DEVICES

# FIVE YEAR GUARANTEE

**VEEDER-ROOT INCORPORATED having inspected and approved the installation of _____ Veeder-Root Loom Pick Counters on the looms of**

_____

**and which counters bear identification numbers** _____

_____

**and were invoiced on Veeder-Root invoices** _____

_____

**hereby guarantees these counters free from defects in material and workmanship for a period of five (5) years and will repair or replace them at its discretion without charge within the above specified period provided the counters have not been abused, used improperly or taken apart, and have been used for the purpose for which they were intended.**

**This guarantee expires** _____

**VEEDER-ROOT INCORPORATED**

**Installation Approved**

**by** _____

**date** _____

**By**

SPECIMEN

_____

**President**

FRANKLIN LEE DIVISION—AMERICAN BANK NOTE CO

# PERSONAL NOTES
## about Men You Know

B. E. GEER, formerly president and treasurer of the Judson Mills, Greenville, S. C., was recently elected president of Furman University, Greenville, S. C., succeeding the late DR. W. J. MCGLOTHIN. Mr. Geer originally was an instructor at Furman, where he was graduated in 1898, leaving the educational field to enter the textile business. He is a past-president of the American Cotton Manufacturers Association.

ARTHUR E. MASSEY recently resigned as superintendent of Exposition Cotton Mills, Atlanta, Ga., to become manager of the American Net & Twine Company, Blue Mountain, Ala., near Anniston. There he succeeds COLONEL H. F. WILLIAMSON, who retired to return to his home in Massachusetts. DOUGLAS WILLIAMSON is superintendent.

FLOYD B. WATSON, superintendent of the Griffin Mills, Griffin, Ga., has succeeded Mr. Massey as superintendent of the Exposition Cotton Mills. At Griffin Mills, which is operated by the Hightower interests of Thomaston, W. D. MASSEY has been transferred to succeed Mr. Watson. Mr. Massey was formerly superintendent of the Peerless Cotton Mills, Thomaston, Ga., where he has been succeeded by ROBERT J. ADAMS, who was promoted to this position.

JULIAN M. LONGLEY has returned to The Dixie Cotton Mills, LaGrange, Ga., as assistant superintendent.

J. M. KING, a recent graduate of the textile school of the North Carolina State College, has accepted a position with the Aragon-Baldwin Mills, Whitmire, S. C.

P. H. BURRUS, JR., has accepted a position with the Spalding Knitting Mills, Griffin, Ga., of which R. P. SHAPARD, JR., was recently made president, succeeding his late father, R. P. SHAPARD, SR. Both Mr. Shapard and Mr. Burrus are graduates of the textile school of North Carolina State College.

A. H. RANDALL, formerly superintendent of the Alabama Mills Company, Clanton, Ala., has been promoted to assistant general superintendent of the Clanton division of the company, comprising the Clanton, Wetumpka, Dadeville and Greenville plants.

WILLIAM R. BARNETTE, formerly assistant superintendent of the Winnsboro Mills, Winnsboro, S. C., has become superintendent of the Clanton (Ala.) plant of the Alabama Mills Company. R. O. ESTES has been promoted to overseer of carding and spinning at the Clanton plant succeeding J. B. BRALEY, who has returned to Itasca, Texas. H. T. MAHAFFEY, a graduate of Clemson College, Class of 1931, is now connected with the Clanton plant.

MARVIN A. LAW, a graduate of the textile school of North Carolina State College, Class of 1932, has been made assistant superintendent of the Elizabeth Mill, of Textiles, Incorporated, Charlotte, N. C.

LESLIE E. LANE, formerly assistant superintendent of the Indian Head Mills of Alabama, Cordova, Ala., has become assistant manager and purchasing agent at the plant of Bemis Bro. Bag Company, Talladega, Ala. A. B. Moss, who formerly held this position at Talladega, has become connected with the Merrimack Manufacturing Co., Huntsville, Ala., in cost and production work.

CLARENCE E. CONE, who graduated in 1932 from the textile school of North Carolina State College, is now assistant superintendent of the Asheville Mills, Asheville, N. C.

ROBERT A. MORGAN is now general manager of the Cedartown Cotton & Export Company, Cedartown, Ga. Under the terms of a consultation contract of the mill with The Textile Development Company, with which Mr. Morgan is connected, the arrangement was changed to a management contract for a year. Mr. Morgan succeeds CHARLES R. BRUMBY.

G. W. DOBBINS, a graduate of the textile school of North Carolina State College, has accepted a position as designer at the Pomona Mill, Greensboro, N. C. W. H. WARD, another graduate of this school, is now located at the American Glanzstoff Company, Elizabethton, Tenn.

THEODORE P. MORRIS has acceped a position with the Hampton Company, of East Hampton, Mass., and will have charge of the company's southern interests, with headquarters in Charlotte, N. C. Mr. Morris has been manager of the Bladenboro Cotton Mills, Bladenboro, N. C.

HILL M. HUNTER has been promoted to the position of secretary and general manager of the Proximity Manufacturing Company, Greensboro, N. C., succeeding the late J. E. HARDIN. Mr. Hunter has been purchasing agent of the company for many years, having started with the Cone organization, which operates the company, in 1899 as office boy. He is a graduate of the North Carolina State College.

W. T. MORTON has become overseer of spinning at the American Spinning Company, Greenville, S. C., having resigned a similar position at the Aragon-Baldwin Cotton Mills, Whitmire, S. C.

S. MARSHALL BEATTIE, president of the Piedmont (S. C.) Mfg. Co., was re-elected as president of the Cotton Manufacturers Association of South Carolina at the organization's annual meeting in Greenville, S. C., on July 7th. A. FOSTER MCKISSICK, of Greenville, S. C., was made vice-president; and WILLIAM P. JACOBS, of Clinton, S. C., was re-elected secretary-treasurer.

OSCAR MEEKS has been promoted to overseer of weaving at Georgia Kincaid Mill No. 2, Griffin, Ga., succeeding M. W. BOGGS, who has taken a similar position at the Rushton Mills, Griffin, Ga., succeeding B. R. WESTMORELAND, who recently resigned after 32 years of service there.

J. L. JEWELL, superintendent of Chesnee Mills, Chesnee, S. C., is acting superintendent also of Saxon Mills, Spartanburg, S. C., succeeding the late M. R. MACOMSON.

CARL M. MOORE, formerly assistant superintendent, is now superintendent of Piedmont Mfg. Co., Piedmont, S. C., succeeding the late S. T. BUCHANAN.

LEONARD S. LITTLE, formerly general superintendent of the Pacific Mills plant at Lyman, S. C., and more recently vice-president and general manager of the Slatersville (R. I.) Finishing Co., has been made president of the United States Finishing Company, succeeding HENRY B. THOMPSON, JR., who is now chairman of the board. Mr. Little is succeeded at Slatersville by DONALD S. ASHBROOK, president of the Bradford Dyeing Association.

K. D. FORSYTH has been promoted to overseer of weaving at the Alabama Mills Company plant at Aliceville, Ala.

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Additional personals and obituary items will be found on page 60.

# WAGES

ARE INCREASING!

---

COSTS

**MUST** BE REDUCED!

---

ACCOMPLISH THIS

BY THE USE OF THE

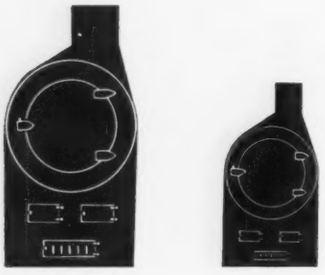
# BARBER-COLMAN SPOOLING & WARPING SYSTEM

# For One Customer Engineered Slasher Control

## *Resulted in—*

**29%** Saving in the cost of size ingredients

**15 - 20%** Increase in slasher speed



**12 - 15 %** Decrease in steam consumption

**25%** Decrease in Loom Stops due to warp breakage (average on nine styles)

This saving paid for the slasher control equipment in less than six months.

You can probably guess how much these savings would mean in your mill. The best way to find out whether such savings are possible is to ask a Foxboro Engineer to look over your present equipment.

There's no formula — no set way of cutting slasher costs. Every case is an individual one requiring an individual answer. Trained in the fundamentals of control, our engineers are in the fortunate position of being able to apply fundamentals to each case.

Foxboro engineered control *is more* than the application of instruments. It goes into the entire slashing operation with the one view of cutting production costs and giving a controlled, uniform warp.

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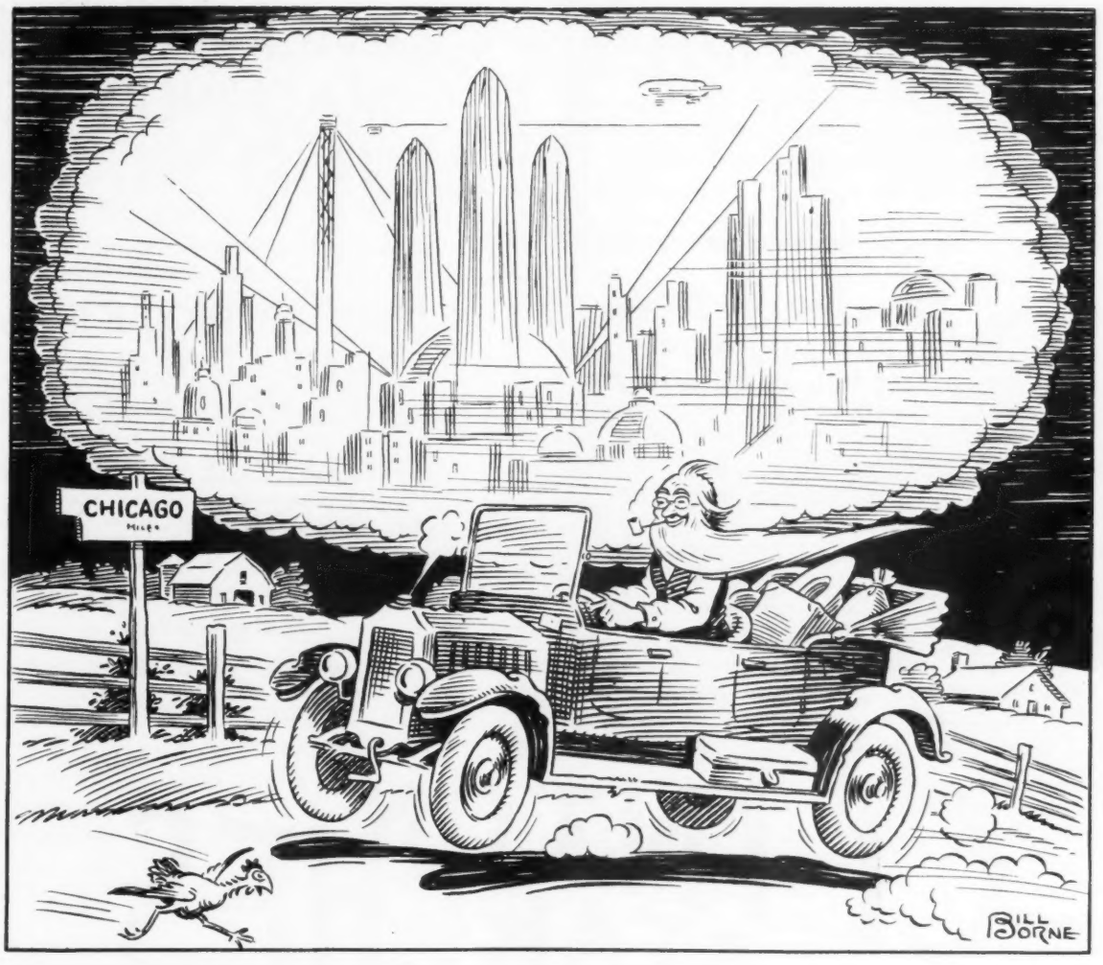
COMPLETE TEXTILE MILL INSTRUMENTATION

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# Off to the World's Fair in Chicago




Dear Mr. Editor: I went to the first world's exposition at Chicago in 1893, when I was 40 years younger and my beard wasn't nearly so long as it is now. When I saw the first announcement of another world's fair to be held this year, I began to save the pennies for a new set of tires and a general overhauling of Tin Lizzie.

So, tell my friends, the Old-Timer readers, that I am off to the big show, but that if my faithful old Lizzie doesn't fail me, I will be back on the job in September.

Sincerely,

OLD-TIMER.

H.M. McCORD

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*Gentlemen!*

THE courage, fortitude and sterling leadership of the great Cotton-Textile industry is an invincible challenge to doubt—despair and business decay..

PROGRESS is the law of life—and to those leaders who are bravely striving to usher in a New Deal—and a New Day for the Textile Industry goes our heartiest commendation—our pledge of co-operation and service .....

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A NEW DEAL

NRA MEMBER U.S. WE DO OUR PART

Not only in keeping with the N. R. A. but in offering a service to the industry no matter what the requirement.

Knowing the markets — capable organization — financial responsibility — qualifications which spell efficient service.

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1. Where machinery is, its exact condition, size, make, functions and usage to meet any particular demand.

2. How to secure machinery at the greatest saving in price without having to pay commissions through several different sources.

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*Here's a service that will save Thousands of Dollars for mills. Drop a line today for full information.*

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Textile Machinery Specialist
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SPEED UP PRODUCTION,
TAKE UP THE SLACK,
WELCOME HOURLY REDUCTION,

STANDARDIZE WITH **WAK**
Pick -- COUNTERS -- Special

**WAK** INCORPORATED
CHARLOTTE, N. C.
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*"YOU CAN COUNT ON* **WAK** *COUNTERS"*

CLINTON STARCHES

FOR ALL TEXTILE PURPOSES
Manufactured by
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CLINTON, IOWA
QUALITY SERVICE

# HOW OTHER MEN MANAGE

## Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

### Another Man's Card Settings.

EDITOR COTTON:

I notice in a recent issue that "CONTRIBUTOR NO. 6172" wants some of us to criticize his card settings, on 1 1/16-inch Low Middling cotton, making a 55-grain sliver. I agree with his setting of 7/1000 of the feed plate to the licker-in; but I prefer 7/1000 for the licker-in to the cylinder instead of 10/1000.

For the back to the cylinder, bottom, I would set at 22/1000, and for the back plate to cylinder, top, 15/1000. This setting on the back plate will keep the short fibers from getting embedded below the knee of the wire of the flat, and when the flat stripping comb strips the flats in front they will be clean; in other words, the flats will not load up below the knee with this setting on the back plate.

The mote knives, both knives, should be set just as close to the licker-in as possible without rubbing. I do not use any gauge in setting the mote knives. After I set all the parts of a card, I start the card up. The mote knife brackets are set just as close to the top of the sides of the card as possible. I loosen the lock nut on the mote knife bracket, then run the set screw up to raise the mote knife up to the licker-in. When I get the mote knife up just as close as possible without touching the licker-in, I hold the set screw with one wrench and tighten the lock nut with another wrench. You can't set a mote knife too close to the licker-in unless it touches.

I would set the back screen at a point where I set the licker-in to cylinder, 10/1000; back end of screen, next to licker-in, to cylinder, 34/1000; middle of screen to cylinder, 34/1000; front end of screen to the thickness of two whole card gauges, to cylinder, 68/1000; doffer to cylinder, if the cards are on the ground floor, 5/1000, if the cylinder and doffer fillet is in good shape and tight.

The flat stripping comb should be set close enough to keep the flats clean. The flat stripping plate should be set so as to take out about 3½ pounds of flat strippings a day of 10 hours on the grade of work given. The doffer comb should be set so as to keep the doffer clean.

Flats to cylinder. If you will look closely at a set of flats you will observe how they are resting on the flexible bend and held so that the points of the wire on their surfaces are almost touching the points of the wire on the cylinder, the exact distance between the wire on the flats and that on the cylinder is adjustable and is usually about 10/1000. The distance between the wires, however, is not the same at each point in the width of the flats. If you will notice the end of a flat closely you will observe that one side of

◆ ◆

**WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Quesions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.**

◆ ◆

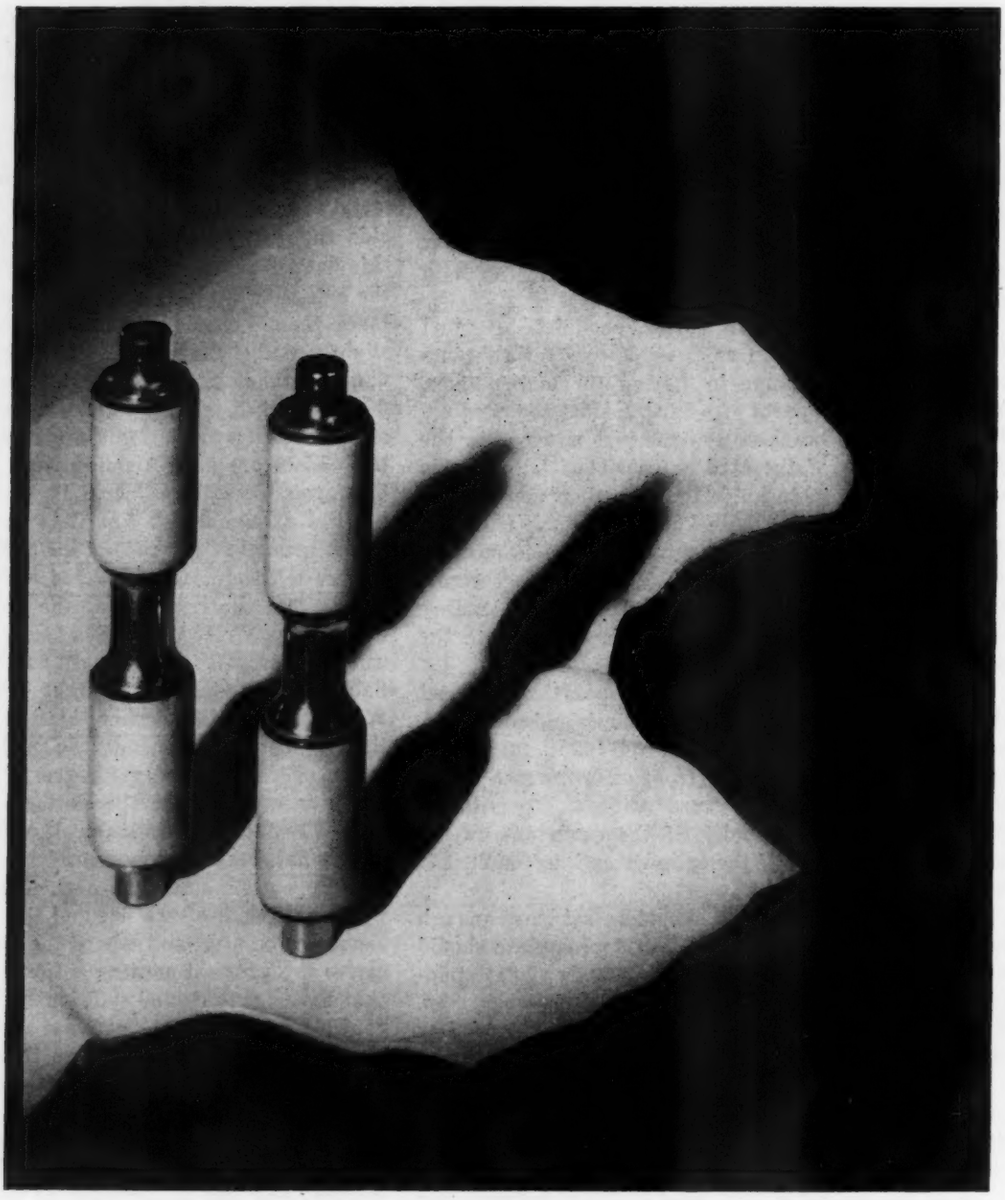
the flat is thicker than the other; in other words, the metal composing the flat end is cut away more on one side than it is on the other and consequently when this flat is turned over and rests on the flexible bend, the side that is the thinner will drop closer to the cylinder than the side which is thicker, thus making a slightly wedge-shaped space between the wires of the flat and the wires of the cylinder. The side of the flat nearer the cylinder is known as the heel, while the side that is further from the cylinder is known as the toe. Flats are always constructed with this heel and toe formation and it should be preserved throughout the life of the card. The flats move at a very slow speed, usually at the rate of about three inches a minute. The cotton is transferred to the face of the cylinder from the licker-in at the point where the two surfaces nearly touch, and is carried upward and forward by it until it is brought to the point where the flats and cylinder are brought into close proximity. When the cylinder reaches the first flat, the cotton on its surface has a tendency to project from it on account of the centrifugal force of the cylinder, and comes in contact with the teeth at the toe of the first flat. The stock is gradually drawn through the teeth of the flat, receiving more and more of a combing or carding action, until the heel of the flat is reached, where the teeth of the flat and the cylinder are in the closest proximity, and where the cotton constantly receives the greatest carding action. Some of the fibers that have not projected sufficiently may not receive any carding action and the cylinder carries them forward to the next flat. Those fibers that have been carded once may be carded again with such additional fibers as are brought under the action of the succeeding flats, and so on through the entire series. The flats are set a little closer to the cylinder at the front or delivery end and at the back or feed end of the card, and this method, combined with the heel and toe arrangements of the flats, insures a gradual effective carding of all of the fibers before they have passed under the last flats.

Now, you can see with this method that card flats

# SPINNA CALF . . .

## Drafts Smoothly—Wears Slowly . . .

THE smoothest of drafting is obtained with Spinna Calf; at the same time it wears slowly without the inconvenience and expense of frequently rebuffing or recovering.



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should be set to the cylinder, back setting block, to a loose 10/1000; next setting block a little closer; and so on until the front setting block is reached, which should be the closest point. This setting is known as a progressive setting. I would advise this contributor to set his cards as I have mentioned and compare the web from this setting with the web of his setting. When he has observed which does the better work then he can adopt it as standard.

CONTRIBUTOR NO. 6236.

## ROVING FRAME TENSIONS
### At the Start of an Empty Bobbin

By Fay H. Martin.

THE starting of winding a bobbin of roving on a roving frame is a very unsatisfactory feature from the fact that the tension on the strand cannot be made uniform on the first three or four layers.

For convenience and efficiency the frame is stopped at about the half traverse on a full bobbin when doffing. By doing so the ends break apart more efficiently when removing the flyers from the top of the spindles. Hence when the frame is started at the empty bobbin, the traverse is nearly always at half traverse; with the bolster rail moving upwards,* the bottom half of the bobbin is covered with roving before the first change has been made. After the first change and the motion of the rail reversed, there are two layers of roving on the bobbin. Thus when the rail reaches half traverse there are two layers of roving on the bottom half without any on the top half. When this point is reached, the roving being wound finds bare wood. Thus if the frame had been adjusted for a perfect tension at the start, the tension would be in error, one change for the top half of the bobbin, and this error would be a slackness equal to one change of the cone belt. To overcome this error it is essential that the tension on the first two layers be made tight to a degree sufficient to have the tension proper to wind the roving on the bare wood of the upper half of the bobbin and also to overcome any difference in the diameter of the bobbins. Thus it will be seen that the first two layers on the bottom half are in a stretched condition so much so that it is noticeable in the yarn that is spun from this roving.

The tension does not become equalized until about four or five layers have been wound upon the bobbin. As an illustration, we will start with an empty bobbin 1⅜-inch diameter and a spindle speed of 1,300 r.p.m. on a frame making 4.00-hank roving, the strand of which is about 1/64-inch in thickness. We will calculate the circumferences of these layers and the speeds that would give a perfect tension while winding them.

Using a bobbin 1⅜-inch diameter with a circumference of 4.3197 inches, we find that this empty bobbin must revolve at an excess speed of 122.71 r.p.m. to take up the roving that is being delivered by the front roll which is 530.10 inches per minute. In our example this 122.71 r.p.m. when added to the 1300 constant speed of the bobbin will make a total of 1422.7 r.p.m. of the empty bobbin.

The approximate thickness of a strand of 4.00-hank roving is 1/64-inch. Two of these strands, one on each side of the bobbin, will increase its diameter 1/32-inch which added to the 1⅜-inch empty bobbin will make a new diameter of 1 13/32-inch after one layer of roving has been wound on the bobbin. This 1 13/32-inch diameter is the diameter that the second layer will be wound upon after the first change of the cone belt. When the traverse has reached the point where the roving began to wind, it will commence to wind on the empty bobbin of 1⅜-inch in diameter but this empty bobbin instead of having an excess speed of 122.71 r.p.m. will only have a speed of 119.98 r.p.m. after the first change of the traverse. This reduction in excess speed will result in a slackness of 11.8 inches per minute of the roving since 530.10 inches are being delivered constantly by the front roll per minute. The bobbin at 119.98 r.p.m. will only take up 518.3 inches.

The second calculation shows a slackness of 11.49 inches instead of 11.80 inches per minute thus showing a reduction of slackness on the top portion of the bobbin.

The third calculation shows a slackness of 11.30 inches while the fourth calculation shows a slackness of 11.03 inches. By this time the roving on the top part of the bobbin has gradually swelled and its diameter becomes larger. (We should not use the word "swelled" but rather because of the slackness of the tension on the strand at this point, the figured twist has been retained thereby increasing its diameter. This diameter is larger than a strand of roving that

(*) We brought to Mr. Martin's attention the fact that the general practice in southern mills is to doff the frame with the bobbin rail moving downward, and at a point about two-thirds or more from the top of the bobbin. He replied:

"I am very glad you have brought up the question of which way the traverse of the rail should be, either up or down, when doffing a roving frame. My explanation is that the rail should be going up and the frame stopped at full bobbin when about half full traverse, or possibly two-thirds, as this is the proper place for the doffing of the bobbin. When this is done the first change at the new set comes at the bottom of the bobbin. * * *

"I have recently been engaged in making some extensive tests in the best organized and finest running cotton mill that I was ever in. While there I brought up the question regarding tension on roving frames at the starting of a doff as set forth in the article. They told me that they had made a thorough study of that subject and their findings were the same as those given in my article; their reasoning was the same but they went further and went into the spinning room with it. They claim that with the top of a bobbin becoming bare first, the spinner can see this bare wood much easier than when it is on the bottom of the bobbin. After their study they established a rule that all roving frames must be stopped for doffing with the bobbin rail going up so that the first change at the start of a doff will be at the bottom of the bobbin, and that the spinners must put in a full bobbin in the creel of the spinning frame as soon as they see bare wood at the top of the empty bobbin, and must not allow the last two layers of roving that are on the bottom of the bobbin to be spun. I watched the bobbin cleaning machines, of which they have three, and I found that this rule was being obeyed 100 per cent."

An experienced and practical mill man, who read Mr. Martin's article in manuscript and our correspondence, makes the following comment:

"I have just read for the third time Fay Martin's article, also your comments and his reply to your comments. I agree with you that most mills start their roving frames with the bobbin rails going down and I have always believed there were two reasons for this:

"First, because when the pieces are taken out of the creel of the succeeding process, it is easier to strip the small amount of roving left on the bobbin over the top than it is to strip this from the bottom up.

"Second, on practically all makes of roving frames having swing gears, the end tends to tighten as the rail comes up, which particularly helps on the first change at the bottom. Frankly, I do not believe that the starting position of the cone belt should be such that the frames can be started up full speed after doffing, for I know we get a better tension on the first few layers running them at, say, one-half speed and starting the cone belt in the position necessary to give a good tension during these first few layers than is possible to obtain when starting up full speed. Mills making ordinary counts, say, up to 6.00-hank roving, would not find this anywhere of as great consequence as mills making finer hanks, say, 15.00 to 30.00-hank. I have run considerable quantities of roving in this finer range and know that we got better running work on the frames and less variation in our yarn numbers when we started the frames slowly as described. In fact, I do not think you could find a really good jack frame tender in a fine yarn mill who would not bear this out and probably always start her frame in this way."

has been stretched which reduces its diameter, also its turns of twist per inch, which produces a weakened roving.) Because of this slackness the tension has become equalized to a certain extent.

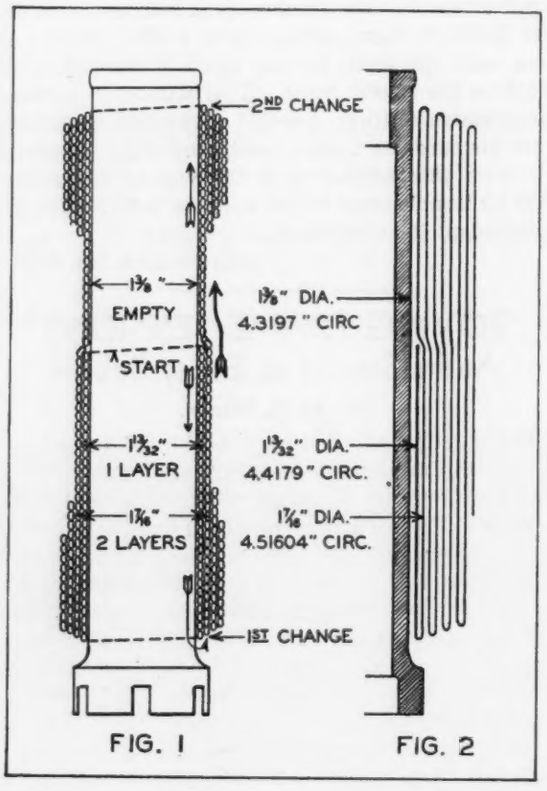
The calculation is very simple, just divide the number of inches being delivered by the front rolls per minute by the circumference of the bobbin at that point and the answer is the excess speed revolutions per minute for the proper tension, the contraction due to twist need not be considered.

The variations in the excess or winding speed of a bobbin are always greater when the bobbins are small as tabulated below.

| | | | | |
|---|---|---|---|---|
| 1 3/8- | inch Diameter Bobbin | 122.71 | r.p.m. | Excess |
| 1 13/32-inch | Diameter Bobbin | 119.98 | r.p.m. | Excess |
| 1 7/16- | inch Diameter Bobbin | 117.38 | r.p.m. | Excess |
| 1 15/32-inch | Diameter Bobbin | 114.88 | r.p.m. | Excess |
| 1 1/2- | inch Diameter Bobbin | 112.49 | r.p.m. | Excess |
| 3 1/2- | inch Diameter Bobbin | 48.21 | r.p.m. | Excess |
| 3 17/32-inch | Diameter Bobbin | 47.78 | r.p.m. | Excess |

This reduction of excess speed will keep on varying at each change of the cone belt until the bobbins become full at 3½-inch diameter. In our illustration at this point the excess speed will be 48.21 r.p.m. and one layer added to the 3½-inch diameter will make the bobbin 3 17/32-inch. The correct excess speed for the diameter will be 47.78 r.p.m.

Thus you will note that 1/32-inch added to 1⅜-inch



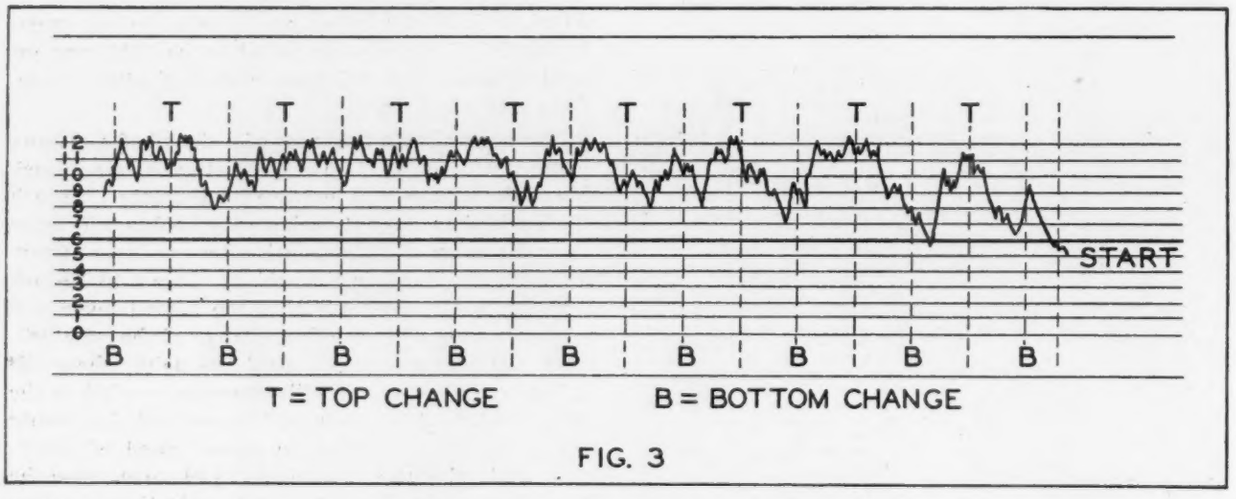




FIG. 3

diameter makes a difference of 122.71 — 119.98 = 2.73 r.p.m. while 1/32-inch added to 3½-inch diameter would only be 48.21 — 47.78 = .43 r.p.m. Thus it is that the error in tension at the starting of a bobbin takes place at a point where the percentage of gain from one layer to another is at its greatest.

We have made three diagrams, Fig. 1, Fig. 2, and Fig. 3 to illustrate what is taking place when a new doff is being started on a roving frame.

The strands on Fig. 1 are enlarged while on Fig. 2 we have shown a continuous line to represent the layers and changes.

In Fig. 1 we have given diameters and circumferences which have been used in the calculations while in Fig. 3 we have shown a diagram as made on an automatic roving tester.

If a spinner is therefore desirous of getting an even breaking strength, the conclusion from the above facts can be drawn that it is advisable not to let the bobbin run entirely out but remove and replace by a full bobbin as soon as the bobbin is down to the last two or three layers. The writer understands this is being done in many European mills. That the above conclusions are correct is furthermore shown by diagrams made on the so-called automatic roving tester as invariably the last few layers test entirely different from the balance of the bobbin and anyone familiar with the diagrams made by this machine will recognize this fact by the diagram as shown in Fig. 3.

(We have previously published two interesting articles on roving frames by Mr. Martin—"Roving Frame Cones—Why They are Concave and Convex," page 82, May 1932 issue, and "The Compound as Applied to Roving Frames," page 80, June 1932. Clippings of these will be furnished upon request.—The Editor.)

## Some Useful Forms For the Overseer of Carding.

EDITOR COTTON:

I am digressing a bit in this contribution from my regular run of discussions; as you will remember, I started out to deal with carding by individual processes. So far I have reached the drawing, and I hope to have at least some constructive criticism on these contributions. This article is written from my own experience and deals with those things which I have found to be helpful to me, so I see no need of keeping the "light under a bushel." I'll admit that these forms, etc., are quite like inventions—born by the mother of necessity.

The first thing I'd like to write about is a certain little notebook presented to me by my superintendent sometime ago. In giving it to me he said, "Here is a book that you might use to a great advantage if you care to. By that I mean that you might write down some constant reminders that will serve to freshen you up from time to time." He also added that, "nobody can remember everything in order just as he should at every demand, so I think it a good practice to write down even the everyday things." Well, I appreciate the book and his remarks more now than I did that day. I thought then that perhaps he just wanted to remind me that I was not doing so well (and maybe I was right at that). Anyway I accepted it as enthusiastically as possible, and through fear and curiosity I tackled it as outlined below.

I set aside the first five days for "Opener Room", and then wrote in the following order:

Damaged Cotton
Burlap Threads Mixed into Cotton
Feeding from too large pieces from individual bales
Ties and buckles on floor.
Aprons runner pulleys lapped
Improper mix
Machines not properly cleaned of motes
Broken slats letting cotton fall to floor
(I'll fill those other pages yet)

Next came "pickers", and I set aside five pages for this process, listing the following items:

Hoppers too full; hoppers too near empty
Soft laps; big ended laps; ragged selvages
Too much waste in mix
Evener belts too far from cone centers
Dull beaters
Choked grid bars, screns, feed roll necks
Thick and thin places
Employees setting laps down carelessly
Conveyor cleaning sections not emptied
"Indicator" and "sling" not checking together.

Then came "Cards", and I devoted five pages to this subject, listing the following items:

High combs, low combs (tight or slack webs)
Uneven "topping"
Leaking comb boxes, rattling, vibrating
Clean out doors not put up properly
Inspection of fly waste
Slack belts, bands, crossed bands
Cloudy web, neps
Scavenger roll stopped
"Fronts" dirty; stripper doors won't close


# Solving Your LUNCH and COLD DRINK Problem

Mill managements generally appreciate the increased efficiency and good-will secured through having a refreshing lunch or soft drink available for the employees. However, they also know the tremendous loss in time and profits in permitting employees to stroll to and from concession stands. ***Under the new working schedules,*** this wasted time becomes more important than ever before.

Many mills are meeting the situation with the

## WRIGHT COLD DRINK AND FOOD CART

Model 506, shown above, is a veritable cafeteria on wheels. Scientifically designed, insulated and ventilated. Kept cold with ice or mechanical refrigeration, it will hold 480 bottles. There is room for a large supply of sandwiches, pies, gum, tobacco and other sundries in the shatterproof glass display box. Can be handled with utmost ease even in very narrow alleys.

Enables the employees to be served right at the job, without leaving their machines. Will last indefinitely, and will convince you that it is not only a money and time saver, but creates the goodwill and increases the efficiency of the entire working force. Other models to suit your requirements.

*A few of the many users are:*

ARAGON-BALDWIN COTTON MILLS
BEMIS BROS. BAG COMPANY
BIBB MANUFACTURING COMPANY
DIXIE MERCERIZING COMPANY
PEPPERELL MANUFACTURING COMPANY
SAUQUOIT SPINNING MILLS, INC.

*Write for descriptive data and prices. We will be glad to make suggestions for your particular needs. There are no obligations. Get the information TODAY.*

## WRIGHT COMPANY

84 LUCKIE ST. N.W. ATLANTA, GEORGIA

properly
Cylinder bearings too warm; coiler heads noisy
Calender roll clearers missing
Faced fillets—whipped up or bruised doffer fillets
Dull fillets—loose clothing
Hooked fillets—cylinder rubbing arch or frame ends.

Then came "Drawing" and five pages were devoted to this, with the following items listed:

Clearers not picked
Knock offs not operating
Spoons "slow"
Rolls dirty
Rolls lapped up
Rolls cutting
Rolls not oiled; rolls too heavily oiled
Fronts—backs dirty
Cans not creeled in properly
Topping or cutting of cans, turning cans
"Flaky" sliver
Carrier gears too deep—too shallow
Draft gears too deep—too shallow
Calender roll bearings worn
Tight tension—slack tension

The last section was "Fly Frames" to which I devoted five pages on which I listed the following:

Guides dirty
Creels not properly set in
Clearers not picked
Spindles not picked
Dry steps
Top rolls dry—too much oil
Steel rolls dry—too much oil
Waste, hard ends, doublings, singlings
Putting up ends with dirty hands
Tight tension—slack tension
Roving not marked—doffing in dirty box
Pressers not wrapped correctly
Bobbin gears dry—jumping
Flyers dirty—spindle tops dirty
Twist gears, draft gears, lay gears not set properly
Belts slack—too tight, dirty.

As you will notice, I have not filled up those five pages for any process, and may never find enough to fill them all, but I have at least made a start for it. No doubt you wonder why I put down only the unpleasant things. I did that because those are the only things we carders ever hear about, so I guess it is second nature, and then too I know the superintendent is looking for those things so I am just trying to beat him to the draw.

Some carder may pat himself on the back and say that this is all right for a beginner but that he doesn't need it. I can only answer him by saying that if that is the way he feels about it it is O. K. by me, but he should not forget what a fix Rip Van Winkle was in when he woke up.

Date.....

Mill No..... Dept..... Process.....

Hank Rov..... Changed From..... To.....

| Gears Put On | | | Gears Taken Off | | |
|---|---|---|---|---|---|
| Amt. | Name | Teeth | Amt. | Name | Teeth |
| | Crown Gears | | | Crown Gears | |
| | Draft " | | | Draft " | |
| | Lay " | | | Lay " | |
| | Twist " | | | Twist " | |
| | Tension " | | | Tension " | |

.....Overseer .....Supt.

Gears Changed By.....

Gears Checked By.....

Form 1

I keep this book in a filing cabinet beside my desk and give it a review about twice each week. I find that I did need this book and it not only freshens a fellow but it keeps him fresh.

I mentioned the filing cabinet, so I guess you will want to know what it's for. Well, here goes: It has two drawers, one for each of our two mills, and each drawer has a card index. These cards measure 4 x 5 inches and are plain, with no lines on them. Anything in the nature of a record is written on one of these cards and put into its proper place. For exam-

DAILY SIZING REPORT

DATE.....

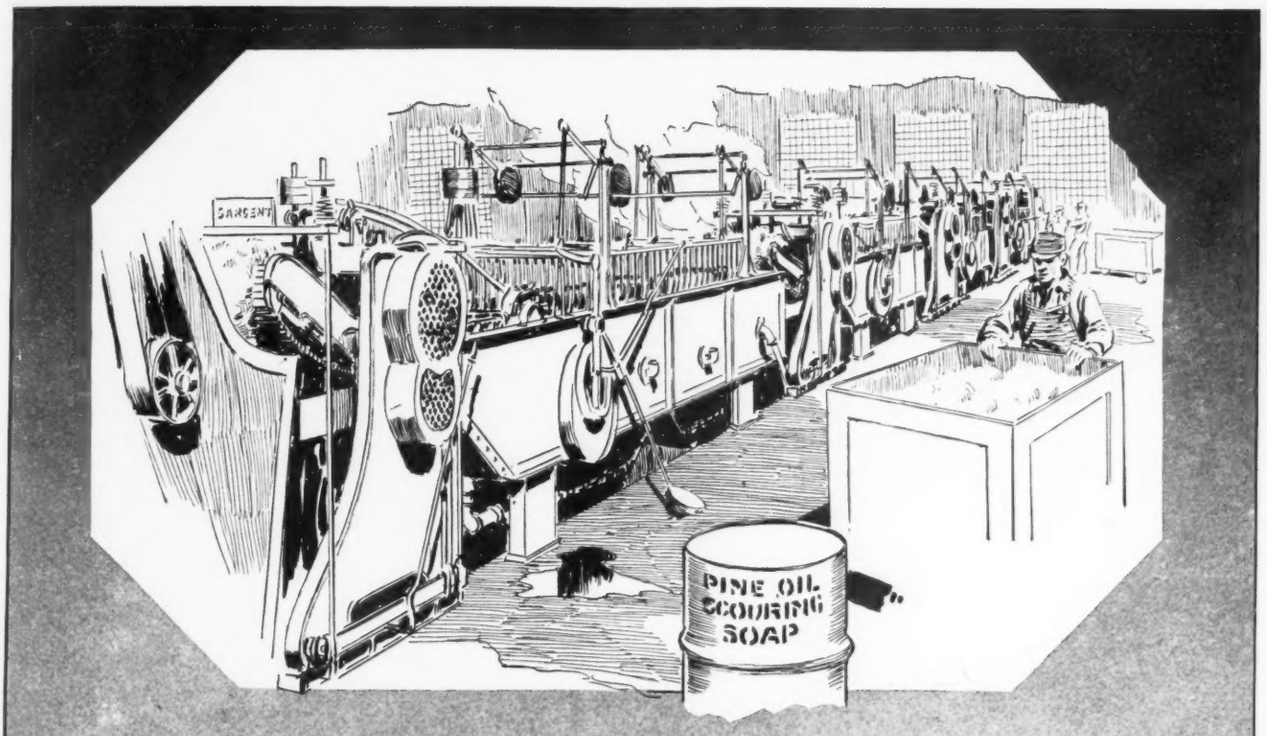
| NO..... CARDING | | | | NO..... SPINNING | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| HANK ROVING AND STYLE | | | | SPINNING NOS. STYLE AND BREAK | | | | | |
| | | | | B | | B | | B | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| HUMIDITY | WET | DRY | RELATIVE | % REGAIN |
|---|---|---|---|---|
| A.M. | | | | |
| P.M. | | | | |

SIZED BY.....

OVERSEER.....

Form 2

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3. Oils, greases, and foreign matter are loosened, held in suspension, and then easily rinsed away.
4. This soap prevents the precipitation of insoluble calcium and magnesium soaps on the stock.
5. Clean, soft, white wool is obtained.
6. This soap will help eliminate rancidity of material in storage.
7. Spinning, weaving, and finishing troubles are reduced.

*Ask your textile chemical manufacturer about wool scouring soaps containing Yarmor.*

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Steam-distilled Wood Turpentine
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Alpha Terpineol
Commercial Abietic Acid
Hercolyn
Nitrocellulose
Chemical Cotton

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UNIVERSAL WINDING COMPANY
BOSTON

# UNIVERSAL WINDERS

ple, a card for speeders will have the complete organization of a certain hank roving with constants, multiples, front roll speed production, etc., on it, and each card is dated. Another card will be the record of a certain test, another the record of some new device or mechanical appliance—but each card is filled out according to the process and it gives me detailed information the moment I need it. I have made our superintendent acquainted with this system and should he want any information he knows where to look for it.

The next thing I shall mention will be some forms that I have brought into use which are quite helpful to me and at the same time serve as permanent records. The first is a gear change sheet, shown as Form No. 1. This is self-explanatory yet some remarks won't hurt. Before these forms were put into use we had no way of knowing who made the last gear change, or when it was made, so no one was particularly careful. Now, however, the man who changes and the man who inspects the change (the second hand) as well as the overseer and superintendent, all know about it and their signatures are evidence of the fact. It may look like a lot of red tape to someone who does not like it but it certainly keeps everybody careful about those gear changes.

In Form No. 2 I am showing a report that is used every day. Each day's report is filed for future reference as to weights, numbers, humidity conditions, etc.

Form No. 3 is a detailed report of the machines run, production, weights, etc., and this is made up daily.

DAILY REPORT OF CARD ROOM No.....

| PROCESS | Spindles | Productive Mch. Hours | | Mchs. Run | Hanks Run | POUNDS RUN | WEIGHTS | |
|---|---|---|---|---|---|---|---|---|
| | | Allowed | Run | | | | Standard | Actual |
| Opener Room | | | | | | | | |
| 40" Finisher Pickers | | | | | | | | |
| 45" Finisher Pickers | | | | | | | | |
| 40" Cards | | | | | | | | |
| 45" Cards | | | | | | | | |
| 1st Drawing—4 Del. | | | | | | | | |
| 1st Drawing—6 Del. | | | | | | | | |
| 2nd Drawing—4 Del. | | | | | | | | |
| 2nd Drawing—6 Del. | | | | | | | | |
| Slubbers | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| Intermediates | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| Speeders | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |
| " | | | | | | | | |

Date.....193 DAY NIGHT..... Overseer

Form 3

Form No. 4, although at first glance it might appear to be self-explanatory, is quite complicated. After sizing up the yarn, I take a bobbin of a known number and weave it into cloth. I do this with each style of cloth. I take this piece of cloth from the loom (cutting it out). Next I measure this piece of cloth for its actual width. Now I mark a piece about 6¼ inches square and cut it out with a pair of sharp scissors. I take this cloth and pull out from each of its four sides enough threads of warp and filling to make it exactly six inches square. Then I cut off the fringe that is left around the sample, and balance the scales and weigh the sample. Now for the formula: Multiply the actual width of the cloth by the actual weight in grains of the sample and divide this through 7,000. The answer is the yards per pound.

.....193

CLOTH WEIGHTS BY TEST OF SAMPLES 6-IN. SQUARE (TODAY'S FILLING)

| Style | Width | Weight in Grains | Yards Per Lb. | No. Fill. Yarn | HK. Rov. | Cloth Room Report | Standard Weight |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Overseer.....

Form 4

Too much care cannot be exercised here, for if the sample is incorrectly cut, weighed or handled with moist hands, it's no good.

I find it better to cut these samples one day, leave them in the weave room over night and weigh them the next day. I find that where I size the yarn in the card room, take the filling to the weave room and weave it and then bring it back to the card room for the sample procedure, that the cloth will weigh about 2¾ per cent lighter than it does when left in the weave room long enough to absorb the weave room humidity.

With these different reports to make up, and I do it myself, you will no doubt wonder how I find time to run my job, so I'll explain that too. My second hand does the routine sizing of yarns and roving. I size, weigh and otherwise make up the cloth sample reports personally, and I make up the yarn or roving

size reports from his record. Either or both of us make up the production report. The gear change is good only when properly signed. Now that part of how it is done. Here's some more of it. Such things as visiting with other overseers, going to the store or post office, going up town, sleeping in the office, dodging the superintendent, etc., are like hobble skirts—they are out of style—and as I have always appreciated good style I have not indulged in the aforementioned vices (lately) so therefore I find plenty of time to do my work.

Now, let some of the fellows who read COTTON come in with their wallops. They know that times have been hard so long that we have become more or less obsessed by the depression, so let's start some constructive discussion, arguments or anything else that will put us to working together. Sometimes it helps me to sit up at night and study about some fellow's job that I have visited, and try to formulate some plan that will help me make my job look and act as good as his.

CONTRIBUTOR No. 6123.

## A Textile Graduate Takes "Wash" to Task and Answers His Carding Questions

**This is a spicy answer to our old friend "Wash," which you will enjoy reading, and which gives this man's ideas on "Wash's" questions. Do you agree?**

EDITOR COTTON:

I have read the discussion which resulted from the questions on various phases of carding that were submitted by "WASH (R. I.)" on page 83 of the December issue of COTTON. In that letter he submitted four practical questions and challenged textile school graduates to answer them. I refer specifically to the answers given by "CONTRIBUTOR No. 6207" on page 69 of the April issue, and to "WASH'S" comments on this man's answers on page 57 of the June issue.

The viewpoint of and the attitude toward the textile graduate that "WASH" has taken have aroused me, and, being a textile graduate, I want to say a few words in defense of one who has studied textiles from both the theoretical and the practical side.

"WASH" seems to be biased in his opinion of the textile graduate. He concedes very little to him and seems to be of the opinion that his knowledge is nil. I advise "WASH" to visit some of the textile schools and take an inventory of their courses and the character of the men who maintain the various departments.

The textile school can be admired in that it teaches its graduates to have a broad and open mind. It teaches them not to disillusion themselves into thinking that they have mastered all of the problems of the industry. It teaches them to analyze and to think wisely and conservatively.

"WASH" concludes that the solutions which he himself gave to his problems, on page 57 of the June issue, are the only ones which are right. He makes some very broad statements, and I am reminded that broad statements come from narrow minds. An institution of learning would open the channels of his seemingly narrow mind to an extent where he would realize the small dimensions of the world in which he lives.

My criticism is directed not toward practical men as a group but to "WASH" alone, who has refused to recognize the graduate. At present I am associated with practical men and I have the deepest respect for their knowledge. I admire them, for they do not make a burlesque of their knowledge—which is one of "WASH'S" shortcomings. I have learned much from them and to them I am obligated. I feel that a spirit of co-operation should exist between the graduate and the practical man for the benefit of the industry. The graduate should recognize the practical man's position, obtained through long and persistent work, constant effort and application. The practical man should acknowledge the accomplishments of the graduate.

The textile school does not guarantee positions to its graduates. The success of its graduates depends upon the individual. The success of any man depends upon the ability of the individual. The integrity of the textile schools and their work can be easily determined by noting the responsible positions held by textile school alumni. These positions indicate the caliber of men who are representative of the textile schools.

I do not want to fail to consider the practical men who are leaders in the textile field, for many of them hold responsible positions and I have the deepest respect for these men. My hat is off to them.

### "Wash's" Questions and His "Solutions"

I now want to consider "WASH'S" practical questions and his own solutions of them as given on page 57 of the June issue. I notice that he labels some of his as the "real answers" and the "real causes". I am surprised that a man who boasts of long experience attributes the same problems, under different circumstances, to one cause. It is evident that his power of thought is bound by the ropes of conceit.

In his first question he says that, *"The breaker lap is larger in diameter at one end, although the lap rack and drafts are in perfect condition. What causes the diameter of the lap to be larger at one end?"*

In his answer in June, he brings up the conditions existing "in case of oil spraying or running stick waste through the opener". I wonder why he did not mention in his original question that oil spraying was used. I would advise "WASH" to be more specific in presenting his questions, since he desires such precise answers. I see no reason why he ridiculed the legitimate and practical answer of "CONTRIBUTOR No. 6207" on page 69 of the April issue, which stated, "A large ended lap resulted once from the calender roll weight resting on the floor, and another time from the 'kicker' or pin cylinder not being exactly parallel with the pin lifting apron."

Here's my answer: Uneven laps result from several causes. The "kicker" or pin cylinder is sometimes higher at one end than the other, permitting more cotton to enter one side of the breaker to form a lap at the front where the circumference at the end differs. I have seen an irregular lap caused by worn leather between the cageroll and flue. The worn leath-

er allows the passing stock to be drawn through the flue to the dust pit, but the replacement with new leather eliminates this trouble.

Let's go now to "WASH'S" second question: *"On the card we have a very high speed doffer, and we are making a great amount of waste due to the webs at the front of the card breaking down continually. Is the cause in the comb setting, position, speed or what?"*

"CONTRIBUTOR NO. 6207" in the April issue considered the same things in answer to this question as "WASH" did in his "solution", page 59 of June. He considered comb speed, doffer speed, and the cotton being run. I will admit that he could have been more specific, and that "WASH" needs to be commended for his own splendid explanation in June of the relation of the doffer comb to the doffer and its effect upon the web. He, however, implied that this was the only cause of the trouble mentioned. I have seen a tight web form, but not break, from electricity being present on the surface of the doffer. The electricity tends to hold the cotton to the surface of the doffer, making it harder for the comb to perform its duty, and as a result, form a tight web. In extreme cases the web will break. Sprinkling of water on the floor will remedy this trouble.

"WASH'S" third question: *"On the drawing frames some days we have a tight web between the front drawing rolls and the calender rolls. Then the next day they run slack. What causes this?"*

"CONTRIBUTOR NO. 6207" stated that a different type of cotton, relative humidity, temperature and a change of crown or draft gear could cause a difference in the condition of the web. These true causes were evidently assailed by "WASH" who stated in June, "The real cause is when there is too much waste mixed with the raw stock."

I am surprised that such a statement should come from a man who claims long practical experience. It is evident that no other cause for a sagging web is, in "WASH'S" opinion, to be considered.

"WASH" claims that a change in the roll settings will remedy the "real cause" of a sagging web. I think that resorting to a change in the roll setting is a bad and poor practice. I will be more specific and say that it *is* a bad and poor practice. It is known that the fibers can easily be injured by closer setting. "WASH" claims that a closer setting will remedy a sagging web. It is also known that the web can be tightened conveniently by changing the tension gear. What a waste of time it would be to change the roll settings between the front and second roll to prevent a sagging web when the tension gear could be changed so quickly and easily. I am wondering if "WASH" knows that the machine manufacturers have put a tension gear on the frames for the purpose of regulating the tension. He does display a little ingenuity but it is far from being practical.

Then "WASH" says, "In the case of leather rolls the draft between the front and calender rolls should be less than one." I know I am safe in saying that he is positively wrong. I ask him to figure the draft on the machines that are at hand, and if the draft on such machines does not exceed one, I advise him to make some changes. However, I imagine that advice


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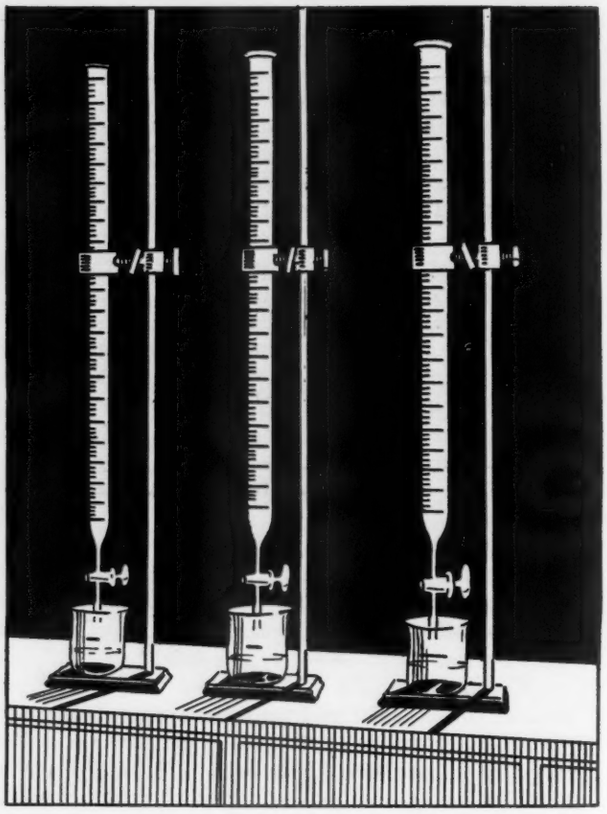

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from a graduate would not be acceptable to a practical man such as "WASH"!

It is known that a slight tension has to be applied between the front rolls and calender rolls. This tension is very slight and is applied by having the surface speed of the calender rolls exceed the surface speed of the front rolls. The difference in surface speeds or the ratio of the two surface speeds forms a draft that is known as the tension draft. This draft is so small that it has no effect upon the weight of the stock delivered by the front rolls. When the draft is less than one, a sagging of the stock is evident because the surface speed of the calender rolls is less than the surface speed of the front rolls.

This is known by all capable mill men. I claim no honor for bringing forth simple facts and conditions that have existed and have been stated in the past.

We come now to "WASH'S" fourth question: *"On a fly frame we have a taper of 27 degrees that causes the roving to run over and under. We have no taper gears on hand to change the taper, but must remedy the trouble. How is this done?"*

I am not going to quote here the answer which "CONTRIBUTOR No. 6207" gave to this question on page 69 of the April issue. It can be found by referring to that number of COTTON. It might be wise to turn to this answer, for it is the only answer that "WASH" concedes to be O. K.

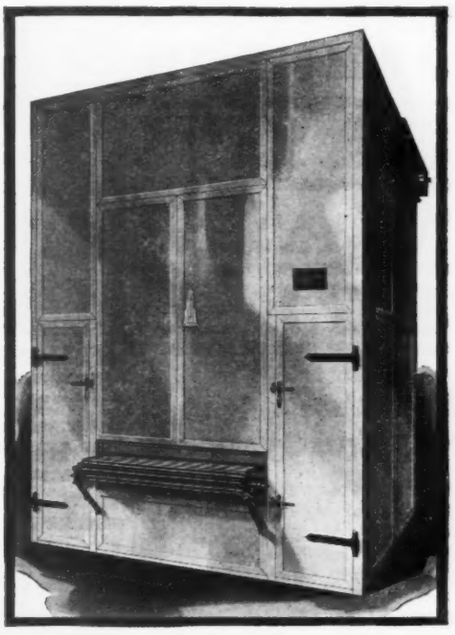
Now "WASH" claims on page 61 of the June issue, that he changed the taper without changing the taper gears in the following manner:

"On the English builder or latch builder, in order to change the taper without changing the taper gear, you must make a mark on the center of a bobbin; next, run the carriage so the center of the eye of the presser pad will be on the mark on the bobbin; next level the poker bar; next, if you wish to increase the taper, shorten the poker bar. Next, raise the latch screws and run the carriage and set to the length of the layer desired."

"WASH" states that if "CONTRIBUTOR No. 6207" were a practical man, he would have followed with an explanation of the English builder. In "WASH'S" own answer which I have just quoted, he does not give one word of explanation of the builder. He submits the foregoing detailed procedure, but he does not give the reason why the action of the builder, on the English type, is changed when the poker bar is shorter and when the latch screws are raised. One might attribute this neglect to a lack of knowledge.

(I should explain here that my discussion of this question is based on frames with the English type of builder, which has a poker bar that runs through the builder motion and moves in as the bobbins build to shorten the stroke. For readers using the American type of builder and with no experience on the English type, I might say that this action corresponds with that of the contracting dogs of the builder on the American type.)

The procedure as outlined by "WASH" for changing the taper on a bobbin without changing the taper gear is wrong. If "WASH" noticed any change on the taper of the bobbin, it was his imagination coming into play. The first words of his description of sup-



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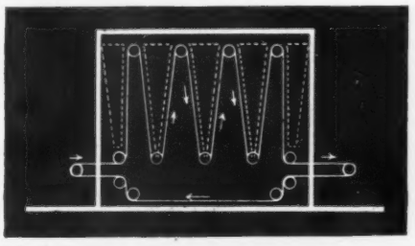
Material held flat while drying . . . no tension . . . nothing touches upper face of goods . . . absolutely uniform air-distribution, giving perfectly even drying at new, high speed . . . Amazing saving in floor space . . . trouble-free performance.

Ask about drying *your* material this new way.



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In every respect a standard Johnson Sizer, except that it will handle warps made up the "cotton system" way.

Speeds both sizing and loom production.

Temperature of each cylinder independently controlled.

Gives absolute control of stretch—stretch may be eliminated, or as much obtained as desired.

Ball bearing equipped throughout — making for light and sensitive operation.

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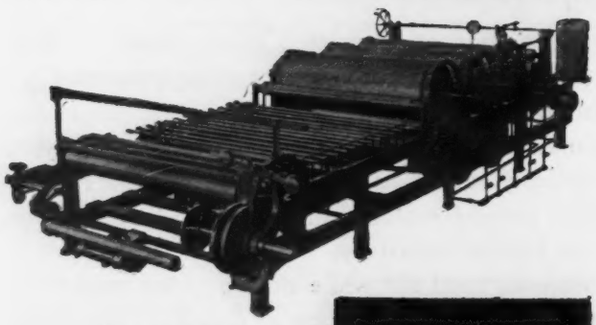
Let us arrange to show you this machine in operation.



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For 34 years Steel Heddle ingenuity and leadership have shown the way in outstanding loom harness developments — until they have become known throughout the Textile Industry as HEADQUARTERS for modern, correctly designed, cost reducing loom harness equipment.

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posedly changing the taper tell how the same taper is formed on both ends of the bobbin. It is a good custom to run the same taper on both ends of the bobbin and the description indicates that "WASH" was not running an equal taper on both ends. Perhaps "WASH" would have had no run-overs or run-unders on his bobbin if, in the first place, he had had the same taper on both ends.

Shortening the poker bar on the English type of builder will have no effect upon the taper. When the bar is shortened, the end resting in the bracket on the carriage is brought closer to the fulcrum point which is the place of contact of the taper gear and poker bar, as a result, the end of the bar in the bracket of the carriage moves through a shorter distance and comes in contact with the latch screws sooner. When contact with the latch screws is made earlier, the cradle is turned earlier, the stop pawls are released from the ratchet earlier and motion to the twin gears is earlier, thus making a shorter motion of the carriage. On each reversal, the taper gear moves the poker bar through the same distance, decreasing the length of the lever arm, which is the poker bar. Each reversal shortens the length of traverse forming a taper. When the poker bar moves through the same distance on each reversal, its motion inward is the same, regardless of the length of traverse. When the poker bar is shortened at the beginning, it assumes a position similar to its position during the build of a bobbin of larger traverse. It takes up its motion here the same as it did in the building of the bobbin of longer traverse. The place where it takes up its motion might correspond to a position equivalent to one-half inch of roving on the long traverse bobbin. When it takes up the motion similar to a position on a long traverse bobbin, the taper is not changed but is continued in the same degree.

I think it would have been wise for "WASH" to have inspected all parts of the builder motion if he was having run-overs and run-unders. Anything that retards the reversing of the carriage on the change causes the roving to run over or under. When the carriage lingers at one end, the roving is accumulated at one spot and this mass slips to form an uneven layer. Worn rings, worn pigeon levers, a worn reversing fork next to twin gears, a worn pin on the lifting shaft, and any other damaged part that influences the movement of the carriage can cause an inferior bobbin.

"WASH", by his grand display of knowledge in the June issue of COTTON, has shown the reader that his solutions are real and will respond under all conditions. A wise step could be taken if he were made the Czar of textiles where he could act in an advisory capacity. If this were done all difficulties of our readers could be submitted to "WASH" who would respond with real answers. What a blessing his services would be to superintendents and overseers.

Lastly, I would like to have "WASH" ask some questions pertaining to a weave room. His experience, I assume, has taught him some weave room technique, and as a result he is in a position to ask some questions. However, if his long experience has failed to take him through the weaving department, I would be more than pleased to answer card room problems

**November 3, 1886**

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**"Akron" Belting,**

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*Today* we build a Waterproof Belt for every type of Mill Drive and *Guarantee Results.*

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THE BOWEN PATENTED BEVEL EDGE TRAVELER
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# "...PAID FOR ITSELF IN ONE WINTER'S OPERATION"

"After installing the complete system both on our finishing machines and on the heating returns we saved 225 tons of coal a year on a boiler developing only 50 horsepower, so that the Morehead Back-to-Boiler System paid for itself in one winter's operation." So writes Everlastik, Inc., Chelsea, Mass., manufacturers of elastic fabric and webbings.

"We eliminated the individual cut-off traps, and repiped the drips as per your instructions with the result that we no longer have leaky traps to contend with, and the machines are always hot. We estimate that production on the finishing machines has been increased from 10% to 15%.

"The Morehead System enabled us to make such a large saving on the water bill that the City Water Works wanted to install a new meter, as they could not understand why we were suddenly using so little water. In addition, we have been able to eliminate BOTH our vacuum pump on the heating system, and the feed pump on the boilers, saving the upkeep on this equipment, including oiling, repairs and waste of steam. The cost of operating the Morehead System is negligible, and it considerably reduces the cost of general plant maintenance."

Isn't it worth a postage stamp to find out what the Morehead System can do for *you?*

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I'd like to know the experiences of Morehead users and to find out what Morehead methods will save me.

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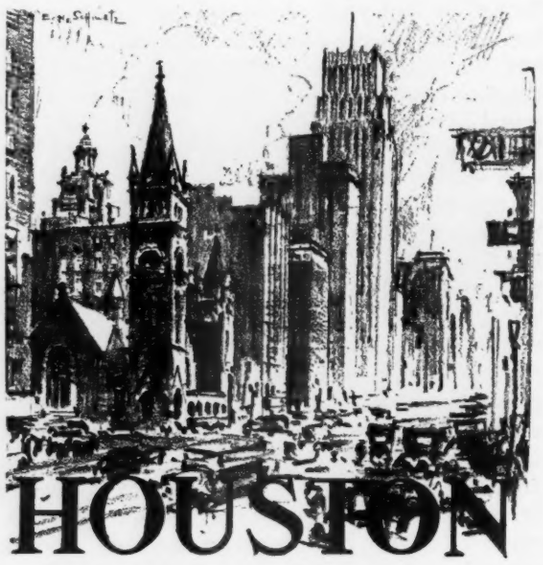

# HOUSTON

HOUSTON is not quite a hundred years old, yet the ninety-odd years of its existence have been so packed with development that today Houston is the largest city in Texas and the second largest in the South; third export port and sixth port in total foreign commerce in the United States; and the leading cotton port and largest spot cotton market in the world!

The industrial spotlight has been focussed on Houston for many years. The city is the leading industrial center of Texas, first in number of industries and first in industrial payrolls; and the recent extensive development of the East Texas oil fields and the fields of the Texas Gulf Coast region has made Houston the capital of a new empire in the petroleum world.

Cotton, however, has played no minor role in Houston's history; rather it has been the central figure of the play, a king in fact as in name. And even now, when Houston is justifiably proud of the diversity of its industrial life, cotton shares its leadership only with oil.

From the beginning Houston was destined to become a great cotton market. It was the *logical* point for the concentration of the fleecy harvest gathered on rich river bottom plantations; trade routes, as far back as Sam Houston's rough and ready day, converged in Houston, and the first railroad in Texas was built to haul cotton from the interior to Houston.

Then, 13 years ago, Houston became a deepwater port, and its importance to the cotton trade, already significant, grew to leadership. Physical facilities for handling cotton at Houston are unsurpassed anywhere —within the several months of a normally active cotton season, Houston compresses, warehouses and railwater terminals could compress and handle the entire cotton crop of the Southwest—so that cotton from the world's largest cotton field rolls as naturally into Houston as water flows downhill. The business generated by the cotton handled through Houston is enormous; it is reflected on the balance sheet of every business house and industry in Texas.

Anderson, Clayton & Co. maintain their offices in Houston. The company also maintains offices in the cities listed below. At all these points large and varied stocks of cotton have been concentrated for immediate shipment to both foreign and domestic spinners.

**ANDERSON, CLAYTON & CO.**

HOUSTON, ATLANTA, NEW ORLEANS, BOSTON, LOS ANGELES, CHARLOTTE, LITTLE ROCK, OKLAHOMA CITY, NEW YORK, MOBILE, MEMPHIS.

that might seem difficult to him.

I realize that my language in this letter has been critical and perhaps abusive in spots. The attitude that "WASH" has taken toward the textile graduate makes me feel that I have not been too unjust in my attack.

I have had experience. I have had a technical education. I boast of neither.

A. T. G. (S. C.)

## A Definition of "Button-Hole" Selvages and the Causes

EDITOR COTTON:

On page 59 of your May issue "CONTRIBUTOR No. 6163" asked what are the causes of "button-holes" in the selvage of cloth, and stated that one man had told him that button-hole selvages are caused by weak filling and that another said they are caused by too much friction on the filling.

Before entering into a discussion of button-hole selvages and their causes, it would be well to be sure that we understand just what is meant by the term "button-hole" selvages. This designation properly applies to a defect in the selvage caused by the filling breaking and leaving a selvage which resembles to some extent a fabric containing a series of button-holes. The term "button-hole" selvages is also used by some weavers to designate a jerked-in or puckered selvage. The jerked-in selvage does not in any way resemble a button-hole, but has an appearance similar to a scalloped edge or saw-tooth selvage.

The remedies for both the jerked-in selvage and the button-hole selvage are apt to be the same in most cases, due to the fact that the selvage first has to be jerked in by the filling before the button-hole effect makes its appearance.

If there is too much friction on the filling the selvage thread will be pulled toward the center of the loom. Most fabrics are wider in the reed than at the fell of the cloth and as the reed comes forward there is a tendency to make the selvage ends form a straight line from the fell of the cloth through the reed. Naturally this puts a strain on the selvage ends and if, as mentioned, the filling has enough friction to cause it to pull in the selvalge ends, the strain on both the filling and the selvage ends is increased.

When the selvage threads have been pulled in by the filling and the reed comes forward, there are three things which can happen, due to the reed trying to force the selvage thread in a straight line from the fell of the cloth through the reed:

*First:* If there is a great amount of tension on the filling, and if the filling is stronger than the warp, the warp ends in the selvage will break. However, this rarely ever happens and when it does the chances are that the temples are not holding the cloth out to the proper width.

*Second*: If the filling is strong enough and is not held too tightly by the interlaced warp threads, the reed will force the jerked-in selvage ends back to their normal position and pull the filling back with

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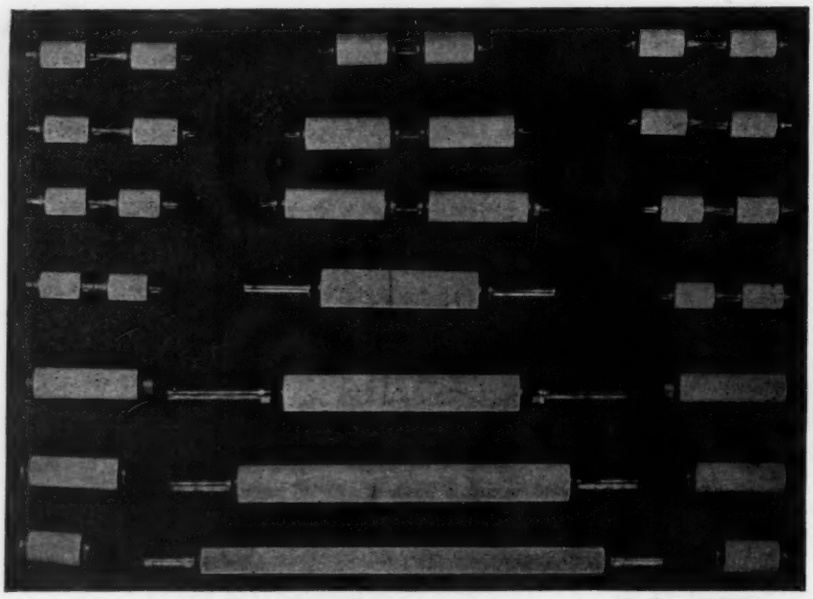

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Capillary feeders place an unbroken film of oil, free from abrasives, on the bearing surface. Positive assurance against oil drippage. These bushings require a minimum of attention, running from two to six months on one filling of reservoir. Absolutely guaranteed as to performance. Standard equipment on many textile machines.

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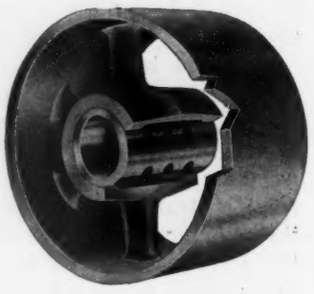
*Brass and Bronze Castings of Every Description*



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them, leaving a perfectly smooth outside edge on the selvage.

*Third*: If the filling cannot withstand the beat-up of the reed, the selvage threads are forced back to their normal position and the filling is broken in the selvage. This gives what is known as the button-hole selvage and is nothing more than a small hole in the selvage where the filling thread has parted.

The most common cause of button-hole selvage is too much friction. A few of the things which may bring this about are as follows: Shuttle springs which do not hold the bobbin in proper position; crooked or rough bobbins; rough shuttle eyes; bobbins which are too long; improperly wound bobbins and shuttles in which the fixers have put too many bristles or other forms of friction.

In addition to the foregoing, there is one other cause of button-hole selvages which I should like to mention, as I feel that it has received entirely too little attention when looking for the cause of the trouble. That is, the proper timing of the harness. It is known to all weavers that the warp threads are slackest just as the harnesses pass each other in crossing. If it so happens that the greatest pull of the filling against the selvage threads comes with the harnesses at this point, button-hole selvages are likely to be the result. In some cases, however, harnesses timed too early cause this trouble even though the filling does not have any more friction on it than is necessary to control it properly. Two other common causes of buttonhole selvages are: improper degrees rest of harness cams, and running the warp too slack. CONTRIBUTOR No. 6250.

## Shelbyville and Lowe Mills to be Sold August 23rd

A. F. Mullins, Jr., has announced that the properties of Lowe Mills, Inc., Huntsville, Ala., and of Shelbyville Mills Co., Shelbyville, Tenn., will be sold at public auction on August 23rd.

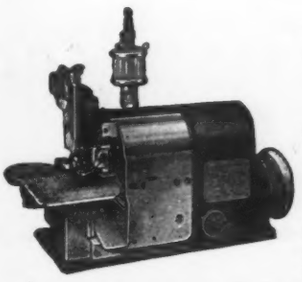
The Shelbyville sale will occur at 11:00 o'clock, A. M., Eastern Standard Time, at the Shelbyville mill office, Shelbyville, Tenn., and will consist of 250 shares of no par common stock, which is all of the stock issued against the corporation. The property includes a mill with 23,000 spindles and 594 looms, balanced for 22s yarn, wide drills, sheetings, etc., store and office buildings, and 112 operatives' houses.

The sale of Lowe Mills, Inc., will occur at 3:00 o'clock, P. M., Eastern Standard Time, at the Lowe Mill office in Huntsville. The property embraces the mill, with 28,672 spindles and 660 looms, warehouses, agent's residence, office and store buildings and 172 operatives' houses. It is organized for print cloth and shade cloth, with 100 looms equipped for marquisettes.

The seller in each case reserves the right to bid at the sale. Information is available from Donald Comer, 58 Worth St., New York City.

## Kennedy Reports Increased Activity

W. A. Kennedy, Charlotte, N. C., pioneer pick counter representative in the South, and president of WAK Incorporated, reported recently that his company has more pick counter business on hand than at any time in the past ten years, stating that many prominent mills are putting in complete installations of counters.

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FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

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This month two Logemann units in the Lee Company's plants are starting their 16th year of service—a service that speaks eloquently of power, time and repair charge savings.

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*Branch Offices In All Principal Cities.*

# TEXTILE BOOKLETS *Worth Writing For!*

*The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.*

**91. Illustrated Buyers' Guide and Catalogue**—Of interest to every dyehouse executive, not only telling what dye house equipment is available in Monel Metal but also where to get it. The International Nickel Co., Inc., 67 Wall St., New York, N. Y.

**92. Silicates of Soda**—A review of the properties of silicates of soda and their various uses. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

**93. Metso** — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

**94. New Development by Onyx**—Eight-page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place Jersey City, N. J.

**95. Onyx Processing and Finishing Compound Catalog**—A thirty-two page booklet listing and describing entire line of processing and finishing compounds, covering every process on all types of fabric. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

**97. Suggestions For The Modern Silk and Rayon Throwster** — describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., Tiogo, Thompson & Almond Sts., Philadelphia, Pa.

100. Bulletin 174, Controlling, Recording, Indicating Instruments for Temperatures, Pressures, Humidity, Flow. 40 page booklet illustrating with installation potographs the uses and advantages of instruments built to meet definite requirements. Foxboro Co., Foxboro, Mass.

101. Bulletin No. 169-1, Recording Thermometers. 48 page booklet describing and illustrating how the installation of proper instruments will result in worth-while savings. Foxboro Co., Foxboro, Mass.

**102. White and Light Shade Cotton Fabrics Dyeing and Finishing.** National Oil Products Co., Harrison, N. J.

**103. Throwing Rayon Crepe.** National Oil Products Co., Harrison, N. J.

**104. Warp Sizing.** National Oil Products Co., Harrison, N. J.

**105. Mildew Prevention.** National Oil Products Co., Harrison, N. J.

**106. Cotton System Warp Sizing on Multiple Cylinder Machines**—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk—Charles B. Johnson, Paterson, N. J.

**107. Complete Information on Alemite Lubrication.** Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

**108. Thickening Materials for Textile Printing**—discussing the more important materials and methods employed in the preparation of color thickenings so that it may be properly and economically transferred to the cloth in textile printing. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

**109. Some Properties of Starch and Dextrine**—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

110. 3-in-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

**111. Roll Spacing Determinator**—showing and describing this machine for cotton mills which eliminates the problems of roll setting to the mill man and determines by mechanical means the exact spacing considering staple, character, size and twist. The Belger Co., 36 Pleasant St., Watertown, Mass.

**112. Belger Long Draft** — describing "ELASTIX" Rolls with which drafts from 16 to 17 on carded and 20 to 22 on combed stock can be achieved without changing the spinning frame. The Belger Co., 36 Pleasant St., Watertown, Mass.

**113. Card Room Testing Equipment**—describing the advantages gained by having the product of the card room machinery tested in the same way as the yarn is tested in the spinning room. The Belger Co., 36 Pleasant St., Watertown, Mass.

**114. Denman Parts for All Makes of Looms**—showing drawings and dimensions of Denman pickers, hold-ups, bumpers, and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

**115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines**—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

**1. Cotton Picking, Carding and Spinning**—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

**2. Pepperell Equipment**—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

**4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor** — Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

**10. Leathers, Textile**—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

**11. Whitinsville Rings**—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

**21. Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

**23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

**25. "Lupogum" and "Monopole Oil"**—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

**28. Akron Belting.**—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

**29. Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

**30. Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

**38. Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

**55. Interpretation of Analysis for the Layman**—An eight page booklet explaining what the various terms used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

**58. Trichlorethylene, Its Properties and Uses**—a forty page booklet showing the properties and uses of Tri, with many valuable suggestions regarding its applications in dry-cleaning, spotting out, scouring textiles, etc. R. & H. Chemicals Dept., E. I. duPont de Nemours & Co., Wilmington, Del.

59. Vat Colors and Their Oxidation—A revised edition giving information and methods of the dyeing, printing and Perborate of Peroxide "fixation" of vat colors. R. & H. Chemicals Dept., E. I. duPont de Nemours & Co., Wilmington, Del.

**62. Rubber Products for the Textile Industry**—a 40-page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

**63. S-W Paint Standardization Plan**—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

**64. Efficiency and Performance of SKF Roller Bearing Spindles** — A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., 40 East 34th St., New York, N. Y.

**65. Why Cooper Hewitt Light is Better Than Daylight**—a 16-page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

**66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176,** describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

**69. Monel Metal Equipment for the Textile Industry**—a 50-page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

**72. The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

**73. New Reeves Catalog No. 99**—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

**75. The Facts About Armstrong's Seamless Cork Cots**—A helpful book containing plain facts, cost studies based on actual mill records, expert analysis, complete details on the advantages of Armstrong's Seamless Cork Cots. Armstrong Cork & Insulation Co., 925 Arch Street, Lancaster, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

**78. Booklet L 1289 A—Loom Motors and Control**—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

**88. Dayton Cog Belt Catalog**—a 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

**90. Atwood Booklet.** Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

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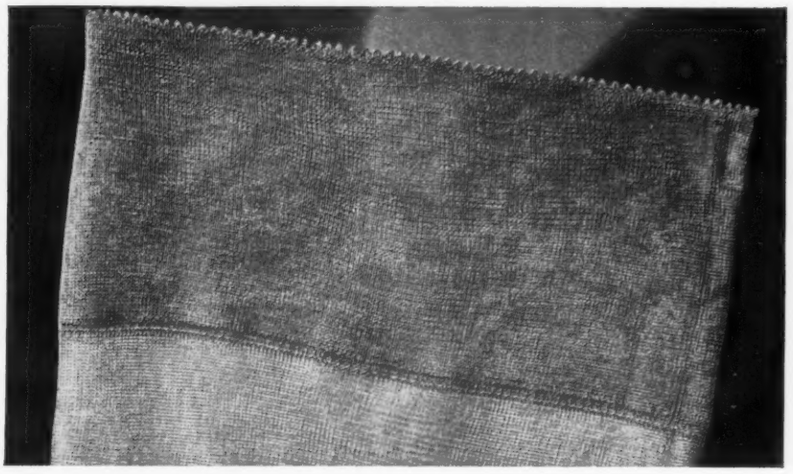

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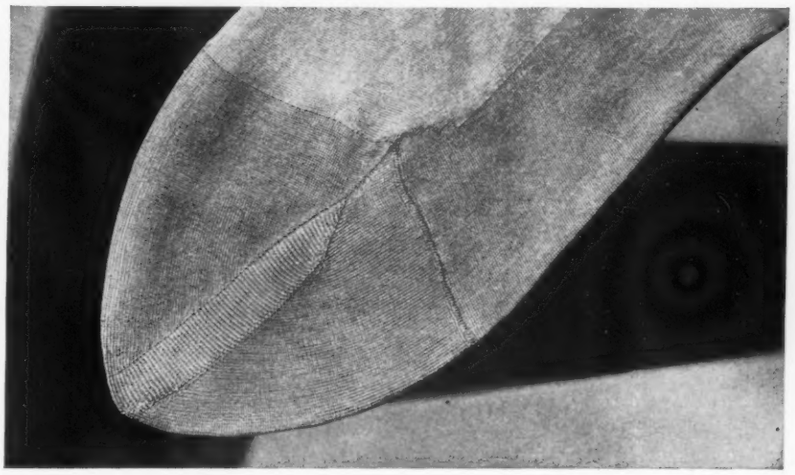

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on the Model K — We refer to this as the "square" heel because of the right-angle stitches. They distribute all strain evenly; prevent all slipping back and forth over the foot. The size and the shape of this new heel are correct and permanent, because they are determined by the knitting (*not* the boarding).

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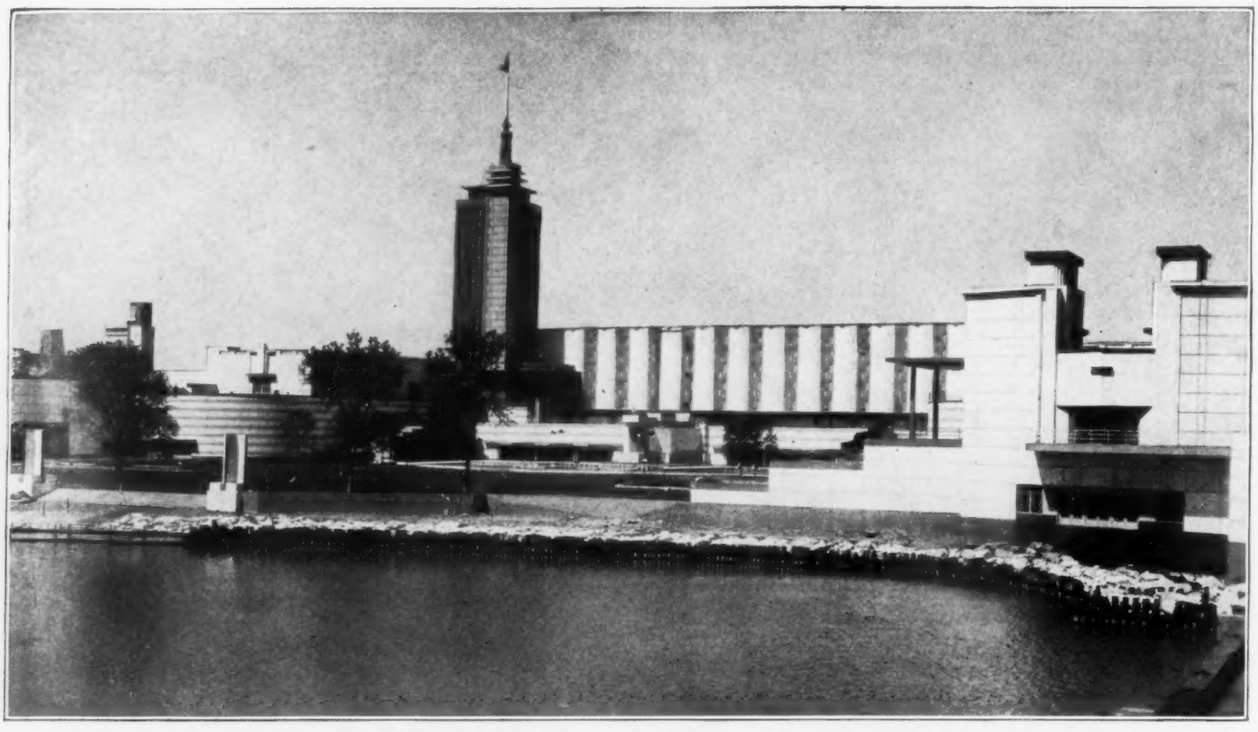

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# Comments on the Hosiery Code of Fair Competition

CODES for the regulation of textile industries in conformity with the National Recovery Act might with propriety be described as capricious in the sense that what they appear to be today they may not be tomorrow. This is not, necessarily, to be laid to the framers of a code or an association of manufacturers representing a distinctive industry, such as hosiery, for example, for even though revisions be not made in a code before it has been submitted to the National Recovery Act Administration, they later may be required by the Administration.

The underwear manufacturing industry was assumed to have virtually adopted "blue prints" of a code for the Underwear Institute, until announcement appeared that the industry had decided to operate under the cotton textile code pending completion of one of its own. One change from the cotton code specified a proposed temporary measure, according to an apparently authorized report, that "sewing machines be operated a single shift for only 40 hours a week, while for knitting machines the 80-hour double shift schedule of textile mills be retained."

The National Association of Hosiery Manufacturers after adopting a virtually complete draft for a code redrafted the original and submitted copies to manufacturers for approval or disapproval of the various articles. Probably before the association had received such expressions from a representative number of manufacturers—considerable time being necessary in order to vote intelligently on the many provisions of the code—the executive office of the organization issued a request, or suggestion, to its membership that the provisional code of the hosiery industry in relation to wages and hours be adopted.

It was proposed also to ask the administrative authorities at Washington for permission to file an application for a provisional code for the hosiery industry under the cotton textile code, which so far, specifically as relates to the hosiery and underwear industries appears to be viewed as a model, which seems the more significant for the reason it was about the first to be filed by any textile industrial division and therefore is to be regarded as an original product of its framers and not a modification of some other code.

The draft of the hosiery code as to wages and hours follows:

### Wages

On and after the date on which the Code becomes effective, the minimum wage, on the basis of 40 hours labor per week, to be paid by all employers in the hosiery industry shall be at the following rates:

#### Full-Fashioned Classification of Workers

CLASS 1—Leggers-Footers: 36 gauge and below, $18.50; 39 gauge, $20.00; 42 gauge, $21.50; 45 gauge, $23.50; 48 gauge, $25.50; 51 gauge and above, $27.50.

CLASS 2—Boarders, $17.00.

CLASS 3—Toppers, Loopers, Seamers, Skein Winders, Menders, Pairers, Finished Inspectors, Helpers on Knitting (over 6 months training), Pairer-folders, $15.00.

CLASS 4—Stampers, Boxers, Gray Examiners, Folders, Cone-winders, Miscellaneous, Learners (including machine helpers) for the second 3 months of their training, $13.00 northern; $12.00 southern.

CLASS 5—Learners (including machine helpers) for the first 3 months of their training, $8.00.

#### Seamless Manufacture Classification

CLASS 1—Machine Fixers, Machinists, $18.00.

CLASS 2—Knitters (automatic machines), Loopers (fine gauge), Boarders, $14.00.

CLASS 3—Knitters (transfer machines, Seamers, Loopers (coarse gauge), Gray Menders, Pairers, Welters, Stampers, Folders, Boxers, Inspectors, Winders, Knitters (ribbed top), Shipping Help, $13.00 northern; $12.00 southern.

CLASS 4—Learners (first 3 months' training), Learners Knitting, Learners Looping, Learners Seaming, $8.00.

The minimum wages in the Southern territory shall be below those given above by an amount not to exceed 10%, excepting learners, and Class 4 Full-fashioned and Class 3 Seamless, as indicated.

The basic code of fair competition for the hosiery industry can be analyzed only from a preliminary draft prepared by the National Association of Hosiery Manufacturers after the largest meeting of mill owners ever held under the auspices of the association, at which full-fashioned and seamless interests were represented by the strongest per cent of both divisions ever assembled for any specific object.

The manufacturers went into session at the Waldorf-Astoria Hotel in New York on July 12 and did not adjourn finally until the following day.

Copies of a redraft of the proposed code, as approved at the second day's session, were mailed to the entire industry for expressions on the question of approval. In order that opposing points of view might be obtained, a provision was adopted "whereby recommendations as to further changes shall be made only after a thorough canvass of the opinion of every person engaged in the hosiery industry (not including workers of course), in which both the majority numerically and according to productive capacity will be shown." It was also decided that three Government representatives should be placed on the Hosiery Industry Board of Control provided for in Article IX of the code as redrafted—but without voting power—in order that the government might obtain first-hand information as to developments under the code. The objective in setting up such a board of control is assurance of the fullest co-operation between the National Industrial Recovery Act Administration and the hosiery industry.

While from the start of the proceedings for ar-

riving at a code for the entire industry there was apparent unanimity as to a 40-hour work week, there was a marked division of sentiment on a provision that "In full-fashioned mills footing machines shall be restricted to one shift of 40 hours per week." In other respects, it was recited as follows:

On and after the date on which this code goes into effect, no employer in the hosiery industry shall employ any employee in productive operations on a schedule of hours of labor which shall exceed 40 hours per week, it being understood that this does not apply to office staff, supervisors, foremen, engineers, electricians, repair shop men, dyers, shipping crews, watchmen, cleaners and outside crews. The productive operations of a plant shall not exceed two shifts of 40 hours each.

[In the drafting of a code for the National Textile Processors Guild it was proposed to ask for a 40 hour week with a 20 per cent leeway for operatives under certain conditions. It was explained by dyers that often, in dyeing, it may be necessary to complete the process, regardless of additional time required, lest a batch in a dye vat be ruined as to colors; that dyeing under many circumstances must be a continuous process, and hours cannot be regulated by any code. Whether such a leeway shall be provided in the final code of the National Textile Processors League could not be authoritatively ascertained at the time the hosiery code was nearing its final stages of completion. The League, in any event, indicated the necessity for excepting dyers from the 40 hours per week restriction.]

Violent opposition having appeared among an element of manufacturers to the provision in the preliminary code draft that "in full-fashioned mills footers shall be restricted to one shift of 40 hours per week," a change in this provision appears in the draft by which the alleged menace of the restriction in its application to many mills is removed, assuming the code as amended shall have the approval of the National Recovery Act Administration.

In bringing about this modification it was maintained by advocates of the change that mills set up to run leggers two shifts and footers only one shift would have a decreased production on two 40 hour shifts for leggers by 23 to 27 per cent, while in mills set up differently, if permitted to run footers only 40 hours per week, the decrease in production would be between 50 and 60 per cent. And it was suggested that to adhere to the one 40-hour shift for footers would result in forcing many operatives out of employment, put a number of mills out of business and make uncertain a sufficient production for meeting demand. After the meeting, a revised form of this article, to apply temporarily until the code itself shall go into effect, provided that "full fashioned footing equipment which is operating one shift shall continue to operate one shift only, and full-fashioned equipment which is operating more than one shift shall operate not to exceed two shifts."

From the viewpoint that Article VIII of the code, assuming this article shall have instant approval, will rid the hosiery manufacturing trade of a variety of evils and abuses—some of them almost inviting criminal court action—its listing of unfair trade practices may be recognized as of prime importance. But listing "The selling of merchandise below cost" as an unfair trade practice is an item that has already caused no little speculation among both manufacturers and dealers.

It appears that adverse criticism of the provision against "selling merchandise below cost" had its origin among representatives of large distributors and retailers. The point was made that frequently manufacturers, and retailers, have odds and ends embracing obsolete colors and style construction for which they cannot get even manufacturer's cost. There is to be no excess of leeway for those figuring cost, for the code provides that "each manufacturer in the industry shall determine costs in a manner approved by the association"—the National Association of Hosiery Manufacturers. Thus the matter of cost is to be readily disposed of for the mill, but in the event that retailers shall be permitted to sell below cost—as often has been boasted of by stores and condemned by manufacturers—in connection with special markdown sales, then manufacturers would appear to be not fully protected. It is one of those possible controversial subjects that doubtless will be amicably disposed of by arbitration, as provided in Paragraph 16 of Article VIII of the code, dealing with Fair Trade Practice, which reads:

> All disputes, pertaining to the interpretation of the Fair Trade Provisions described in this Article of the Code, must be submitted to such form of arbitration as may be set up by the Association.

It seems apparent from the tenor of other provisions aiming a smashing blow at unfair trade practices, that those who drafted the original code were familiar with the methods by which many manufacturers, during the period of serious over-production, were left at the mercy of an element among buyers for the trade that was responsible for the persistent bearing of prices, until mills actually were at the point of starvation. In the keen competition for even the business that showed little or no profit for manufacturers, the latter often yielded to "requests" that customers' sample requirements be invoiced at less than the regular stock prices. This is declared one of the unfair practices. Another, under the code, is the shipping of hosiery on consignment or memorandum. This was done by some of the more important manufacturers selling direct to the retail trade under the manufacturers' trademarked brands, and was discontinued only a few months ago when mills, to which reference is had specifically, closed down and did not resume operating until a few weeks ago.

A better deal for the consumer who has been a victim of unscrupulous retailers seems assured in a "recommendation" that "All closeouts of discontinued styles and sizes and broken assortments, if sold below the price of firsts, 'should' be stamped 'Discontinued' on each stocking with an indelible stamp or transfer furnished only by the National Association of Hosiery Manufacturers."

In the case of closeouts and broken assortments, according to the language of the paragraph quoted,

the use of a stamp or indelible transfer is "recommended", not made mandatory, and failure to comply with this recommendation is not listed as an unfair trade practice, although intended, doubtless, to be provided for in Paragraph 15 of the Fair Trade Practice Article (VIII) which states: "The failure to observe any rule in this code, even if it does not contain the words 'unfair trade practice', is a violation of the code".

The giving of gratuities or bribery in any form, which was a common practice in the foreign dyestuffs trade during the earlier days of the World War, is of course declared an unfair trade practice. To such an extent was the practice carried early in the war that in several instances the government, in response to complaints of manufacturers, stepped in, with an intention of instituting criminal prosecution, which put a stop to the evil for a time.

The return of hosiery by a customer for refinishing or redyeing, without a charge being made therefor, which has frequently been resorted to as one of a number of concessions virtually forced from some of the weaker mills financially, also is declared an unfair trade practice.

For circumventing offenders against the code of ethics who, by refusing to buy irregulars and seconds so designated that the sub-standard status of the goods would be apparent to the ultimate buyer, the code contains a provision that "All hosiery not first quality must be stamped or transferred either 'irregulars' or 'seconds' on the toe or sole of each stocking, except goods of a lower classification commonly known as 'thirds', which must be stamped or transferred 'thirds'." All stamping of this nature must be indelible, the code declares, the words "irregulars", "seconds" and "thirds" to be in full face type letters of not less than one quarter of an inch in height.

To sell mill runs containing hosiery which, according to proper inspection as practiced generally in the industry, would be classified as irregulars or seconds, with the intent or effect of deceiving the ultimate consumer, is of course declared an unfair trade practice, as is the selling of hosiery marked or branded falsely with the effect of misleading purchasers. Necessarily the code declares against other certain practices charged to some manufacturers as intended to take advantage of buyers. Therefore, "To ship or deliver hosiery which does not conform in quality and value of the samples submitted or to representations made prior to procuring an order, without the knowledge or consent of the purchasers to such substitutions" is declared an unfair trade practice. Under the head of misrepresentation of materials the code would make it more difficult for manufacturers to successfully combine fibres in such a way as to give the fabric an appearance of other than what it is. Article VIII declares very clearly:

> If any definite section or sections of the hose be made of a material entirely different from that of the bulk or body of the stocking, when such material gives the appearance of silk the hose must be stamped with the names of both materials.
>
> No material or content shall be stamped on any hose unless it represents a substantial portion of the hose by weight. When two or more contents are stamped they shall appear in the order of their major content.

It will be observed from the language of the foregoing two paragraphs that the code is mandatory as to protecting distributors and the ultimate consumer against being misled as to the character of hosiery in which, for example, silk and rayon might constitute, each, a content of one or other definite section of a stocking. In advance of opportunity for an official interpretation, the question has arisen as to whether the knitting of a Bemberg hem, if presenting the appearance of silk, on a silk leg, would constitute a violation of the mandate in the absence of a proper designation of content.

It was said some years ago of one mill line of women's seamless hosiery which the manufacturer described as silk and rayon, that the only silk in it was in the hem, and only a narrow band of it at that. That was when manufacturers were talking of a code of ethics for the industry, never getting it beyond talk, however, until several weeks ago.

All manufacturers are required by the code to furnish the National Association of Hosiery Manufacturers, as agents for the administration of the code, properly certified reports of such character and in such form as the Association may prescribe, among them to be:

1. Advance basic report covering recent shipments or production figures in the terms of styles commonly accepted in the trade; hours of work, plant operation hours and wages, and equipment.
2. Weekly shipment report.
3. Monthly production, shipment, stocks on hand and change in equipment report.
4. Monthly wages and hours report.

The purpose of such reports, it is stated, is for enabling the Association to judge as to the observance of the code—the extent to which the objectives of the National Recovery Act are being attained and to intelligently make necessary amendments or additions to the code.

The foregoing, from Article VII of the Association's code, seems fundamental of the mandate under Rights of Employers (Article X) that all manufacturers of hosiery shall respect and be bound by Section 7 (sub-section A) of the National Industrial Recovery Act, which provides:

> 1. That employees shall have the right to organize and bargain collectively through representatives of their own choosing and shall be free from the interference, restraint or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection.
> 2. That no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing, and
> 3.That employers shall comply with the maximum hours of labor, minimum rates of pay and other conditions of employment, approved or prescribed by the President.

The framers of the code thus took into consideration the provisions of the National Recovery Act under which "the President may from time to time cancel or modify any order", etc., and anticipated that experience under the code will suggest or demand modifications or additions to it, for better accomplishing the objectives of the Act.

# The Proper Dyeing, De-Gumming and Finishing of Silk Hosiery

By R. H. Smith, Chemist

Melrose Hosiery Mills

A QUESTION appeared on page 93 of our May issue, asking for discussion of the best method of degumming, dyeing and finishing sheer hosiery to minimize crepy stitches and give a good hand and body to the stocking—especially when a thread number lighter than that for which the gauge of the machine was designed is used.

The accompanying discussion by the author was written as an answer to that inquiry, and gives one dyer's viewpoints on this very important subject . . . . .

THE question of dyeing, degumming and finishing silk hosiery would fill several volumes if everyone's methods were compiled together and published. The present-day prices of hosiery have caused the dyer many headaches, in that the mills are buying as cheap a material as possible and knit it the easiest way possible and then leave it up to the dyer to cover up these defects and make a first-class product out of it so as to stack up with a higher type stocking of a competitor. This has been successful in a few cases but in most cases they have fallen short.

The question has been raised concerning sleaziness in a stocking when it has been knit out of a lighter yarn than the machine it was knit on was made to use. Sleaziness is a distortion of the stitches caused by old silk that has dried out and has not been properly conditioned before knitting, or it is caused by improper tensions on the knitting machine. Of course some knitters claim that it cannot be taken out in the knitting room and I do not think it can completely, but it can be helped so that when it is dyed it can be eliminated to a greater extent.

Some mill men assert that if it is not taken out in the knitting room it can be in the dye house. This is not true in many cases. It can be helped appreciably but not eliminated in the dye-house alone.

It has been found that the one-bath method of dyeing gives best results or a split bath if the goods necessitate the removing of excess oils that might be in the goods, such as goods with a rayon top. Care should be taken to remove these rayon oils which might be of a mineral nature, in order to avoid grease spots or "nigger heads" as they are more often called, caused by these oils settling on the goods when the dyebath is dropped. This operation should take about 15 minutes of good boiling to loosen up these oils and chalk deposits or other deposits that might be on the rayon, and then flushed out. Some dyers use one-half of their total amount of degumming oil for one hundred pounds of goods in this first bath. Others use soap or some solvent, as soap holds the oil in suspension in some cases better than an oil. Any good degumming oil or liquid soap preparation, or degumming agent can be used, whichever suits the needs of the particular plant. Care should be taken in selecting, that the pH does not run too high. Most of the best oils start at about 11 to 11.2 and drop back to about 8 after 30 minutes and keep close to this throughout the dyeing process.

Care must be taken to rinse out all the soap in the first bath if soap is used as it will cause the second bath in which oil is used to be rather alkaline and thus hold the color off more. It may take a little more degumming oil in the second bath when using soap in the first, as soap will not remove as much gum off the silk in fifteen minutes as oil will. When oil is used about 30 to 40 per cent of the gum or sericin is removed in the first bath. When using a straight one-bath, seven to ten per cent degumming agent is used according to the structure of the goods, as very sheer goods will not require as much as service weight goods. Run about 40 minutes, salt; run 15 to 20 minutes and sample.

A two-bath method is not as advantageous as a one-bath to remove sleaziness, as the one-bath is shorter and the goods are not worked as long as a two-bath method. Excess working and alkalinity will cause the distorted stitches to increase in size and in some cases to set them. The writer has seen goods degummed as many as five times to see what results would be derived and each time the stitches became more distinct.

A careful selection of colors must be made according to fastness to washing, light, level dyeing and dischargeability with hydrosulphite. Some colors are good as base colors, but cannot be added to the bath after salting, successfully. Colors that leave silk clean are most advantageous for the mercerized yarn and silk colors that leave cotton clean for the silk. Of course the fibers do not have to be left absolutely clean but left fairly clean.

After degumming and dyeing, the goods should be rinsed thoroughly. Sometimes twice to be sure to get all the oils and gum left in the bath out of the goods. Certain oils used in dyeing will not stand up under the action of finishing compounds but will break down and cause grease spots.

When considering the finish that a one-bath method gives a stocking of very sheer nature, as small an amount of degumming oils should be used as possible, so that enough gum will be left in the stocking to give it a fair body. The amount left should depend on what finish the mill desires.

There is no set way of finishing silk hosiery. The

market is full of finishing compounds, all of which find favor in various ways with the different mills. This is a problem that is different at every mill and on every style in that mill perhaps. There are some that use a finishing compound that has a weighting effect and fills up the fibers and a splash-proofing to smooth stitches. Most of the various splash proofing compounds give the stocking a little duller effect than ordinary, and smooths the stitches which in turn helps sleaziness considerably. Other mills want their hose still duller so a sufficient per cent of dull finish compound is added to the above combination. Others want a scroop feel to their hose and a per cent of scroop oil sufficient to meet the demand is still added.

The percentages vary elsewhere. Most mills use from two to four per cent splash proof, about two or three per cent dull finish and about three per cent finishing compound or filler. When scroop oil is also used about one or two per cent is used. Care should be taken when changing any one of the ingredients in the combination, that it works in unison with the others, as some companies' products will not work with other products, causing them to separate or break down and give grease spots.

The arrangement of applying these finishes varies under different conditions as one arrangement may not work at one mill as well as another. The bath should always be down around 85 degrees F. All compounds should be thoroughly boiled up and strained if necessary so as to insure no free matter settling on the goods. Take for example one method that might be used: The goods having been shaken up are entered in bath at 85 to 90 degrees F. Be sure to have bath as short as possible, just barely up to the axis is about right. The dull finish compound is added. Run five to seven minutes and add splash proof compound. Run about five to seven minutes and add scroop oil. Run about five minutes and then add finishing compound. Run about ten minutes and take out. Do not rinse again. Be sure to extract as soon as possible and board at once also. When goods are left over the week-end or night cover up with a damp cloth. This arrangement is not a set rule. These combinations are used mostly on fine gauge work. On service weight goods some mills do not use anything, others a little splash proofing to smooth the stitches or a little gum of some kind.

To gain the best results when dull finishes and splash proofing compounds are used the goods should be taken out and shaken up and put in bags especially for that purpose, because bags used for this purpose might throw the dyebath off, as there are deposits of these finishing compounds left on the bags. The biggest purpose in shaking up the goods in special bags is to insure level application of these finishing compounds. If the goods are tangled these compounds will go on the goods in spots and cause the goods to be spotted and mottly.

As I said to start with, a volume could be filled with every dyer's method together and no one of them might help the other man a bit. This problem of degumming, dyeing and finishing silk hosiery has to be thrashed out in every mill according to its own individual conditions. The method and arrangement in which to apply these finishing compounds and the percentages have to be varied to meet the demand of the particular mill as to feel, hand, weight and general appearance.

## Hosiery Costs Manual

The cost accounting manual of the National Association of Hosiery Manufacturers, 468 Fourth Avenue, New York City, has been published. It is entitled "How to Figure Hosiery Costs —a Guide to Hosiery Manufacturers in Determining Costs and Prices". It was prepared for the association by W. J. Hinson of Miller, Franklin & Co., Inc., and Ralph E. Loper of Ralph E. Loper & Co. It is designed to contain a great deal of "meat" for the practical mill man, without being too technical.

The association points out that under the provisions of the National Industry Recovery Act, the hosiery industry code will call for periodical reporting by all mills on cost of production and other operating data, and that it is immediately essential that all mills have a clear understanding as to what are regarded as the proper principles and methods of ascertaining and setting up cost factors—and this information is supplied in the cost accounting manual. The manual contains 40 pages, and is of pocket size to make it convenient for use as a ready reference. The price is $1.00 per copy, postpaid.

The association announces that it has made satisfactory arrangements with the cost accounting firms mentioned, by which the services of their field men will be available at an established per diem figure, for any mills desiring advice as to the application of the principles of the manual to their individual cost accounting systems.

:: :: ::

## Robert Lawson New President Hemphill Company

Announcement has been made by Hemphill Company, Pawtucket, R. I., that at a recent directors' meeting Robert H. Lawson was unanimously elected president and general manager; John Lawson was made chairman of the board of directors; J. D. Hobson was made treasurer; and L. B. Wilcox was re-elected secretary.

In a statement issued from the Pawtucket office of the company, John Lawson announced his pleasure in the election of Robert Lawson to the presidency and general managership of the company, and stated that he personally as chairman of the board, would continue with his associates on those policies which have contributed to the development of the business. Mr. Lawson further stated that he will have more time available for personal close active contact with the trade.

Robert H. Lawson, the new president and general manager, graduated from the Massachusetts Institute of Technology in 1924, and since that time has been connected with the Hemphill Company. He is well known to the trade for his work as head of the company's engineering and research departments.

J. D. Hobson, the new treasurer, has been identified with the company for many years and for some time past has served as assistant treasurer. L. B. Wilcox, re-elected secretary, is well known to the trade as sale maanger of the company. He will continue his duties as sales manager in addition to those of the company's secretary. Mr. Wilcox has headquarters in the New York office of the company at 93 Worth St., New York City.

This company manufactures the well known line of Banner knitting machines.

## Question on Looper Course Stitch

EDITOR COTTON:

We come now with another problem on seamless knitting which we hope your readers of "KNITTING KINKS" will discuss.

We should like to know if it is found advisable to make a loopers' course of looser stitch on the knitting machine, so as to enable the looper operator to find the proper course and stitches more readily, or, on the other hand, make no difference in stitch from the beginning of the toe to the loopers' round.

If such a course of looser stitch is made where the fabric goes on the looper, are holes more likely to develop at this place? Our work consists of 176-needle half-hose.

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## Percentage of Re-Seamers on Full-Fashioned

EDITOR COTTON:

This replies to the inquiry of your "CONTRIBUTOR NO. 6248", who said that he thinks his figure of .045 of re-seamers on 3 and 4-thread chiffon work is a little high.

It is generally known that seaming 3 and 4-thread chiffon is a more delicate operation than the same job on service and semi-service weight, and requires more skill, deftness and precision on the part of the operative. For this reason, we select from all the experienced operatives those with outstanding ability for this class of work. Our re-seamers from this group of operatives does not exceed 1 per cent.

Much seaming trouble is not the fault of the seamers but is traceable to the knitting, such defects as bad selvages, crooked heads, etc., makes the seaming doubly difficult.

CONTRIBUTOR NO. 6215.

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EDITOR COTTON:

In answer to the inquiry of "CONTRIBUTOR NO. 6248" with regard to re-seamers on full-fashioned hosiery. This man stated that on 3 and 4-thread chiffon work, his re-seamers have been running as high as .045.

Our seamer defects, or re-seamers, on 4-thread 45-gauge full-fashioned hosiery, run between .014 and .025 (that is, 1.4 per cent and 2.5 per cent).

This problem should be approached from the following four angles.

1, *Mechanical.* The sewing or seaming machines must be set up and properly adjusted, to work snugly and accurately, yet smoothly. The cups must be set just right, not quite enough to cut, but close enough to pull through the work steadily. The dogs or rollers, as the case might be, which operate the cups, must be working smoothly. All this depends on a good fixer.

2, *The Goods.* The stocking must have smooth even selvages. The fabric should be the same on both sides. Both of these items are dependent on the full-fashioned knitting department, and close team work between the foremen of the seaming and knitting departments is vitally important.

3, *Supervision and Operation.* The foreman must be behind the work constantly. The operatives must be competent and well trained. Much depends on the spirit which the foreman develops and keeps among the operatives. Likewise, the operatives must be taught to take care of the machines, which makes fixing of the machines a matter of little time.

4, *Checking and Recording.* Records to show the percentage of each operative for every week should be kept. This, and the average percentage, gives a lever to use in hammering down the percentage of defects. It gives the foreman a tool with which to encourage good work and discourage bad work.

To illustrate the importance of having a record to show what is being done, our case is an illustration. When I came to this mill there were no checks made on this. A system of records was promptly installed and the re-seamers showed 5½ to 6 per cent. They were down to the present level (1.4 to 2.5 per cent) inside of a month. We had the ability to do it, but nobody had shown the foreman and operatives just what they were doing.

We also have an extra seamer, and at the end of every week, the one with the highest percentage of defective seams stays out the next week. There have been times when this would not work, but it does now. Also, we offer small prizes from time to time to the one making the lowest percentage.

It can all be summed up by stating that, like any other operation, to get best results there must be *constant* supervision and co-operation with the proper spirit.

CONTRIBUTOR NO. 6217.

# A Discussion of the Parts of Scott & Williams Knitting Machines.

## Plates XVII and XXI

*(This continues the series of short articles discussing the machine parts on Scott & Williams machines, by taking up in order the various plates in the manufacturer's catalog with which all men using this make of machine are familiar.*

*The first article, on page 126 of the October issue, covered Plate I, Plate II, and Plate III; and the second article, on page 86 of the November issue, covered Plate IV. The third article on page 97 of the December issue, took up the parts shown on Plate V. The fourth article on page 94 of the January issue, covered Plates VI, VII and VIII. The fifth article, on page 101 of the February issue, covered Plate IX. The sixth article, on page 73, of the March issue, covered Plates X, XI and XII. The seventh article, page 84, April issue, covered Plate XIII, and the eighth, page 89, May issue, described the parts on Plate XIV. The ninth article, page 81, June issue, covered Plates XV and XVI.*

*It is suggested that in reading these discussions, the reader turn to the plate in question in the catalog and refer to it while reading the comments found in these articles. Furthermore, it will be a good idea to clip these discussions and file them in the catalog along with the plates to which they refer.*

*The numbers in parentheses following the names of parts are the same numbers used by the manufacturers in referring to the parts in the catalog.—The Editor.)*

## S. & W. Plates 17 and 21

EDITOR COTTON:

All of the parts shown on Plate XVII are used on B-5 machines, and are universal on other models also. Plate XXI shows a similar set of parts which are used on the smaller diameter machines, usually called B-3 machines. Unless specifically stated, all remarks and suggestions in this discussion will apply to both plates.

### The Latch Rings

The latch rings (6126, B-5 and 6122, B-3) are both of the new type, being equipped with gap closer rings (6452—6448) and latch ring steel inserts (7863—7857, B-5; 9471-9470, B-3). Menders, seconds and oftentimes waste were difficult to overcome on machines not equipped with a gap closer ring. The various kinds of trouble which would develop were usually caused by latches closing at the opening or gap in the latch ring where the throat plate (7032—7870) is located. Needless to say, the introduction of the gap closer ring has been a big help, on B-3 machines especially.

As a general rule it is more difficult to overcome drop stitch troubles, etc., on B-3 machines than on B-5 machines or other models, due to the smaller diameter and compactness of the B-3 machines.

Bent needle latches were at times difficult to prevent on the old style latch ring, not equipped with the steel inserts (9470-9471). The needle latches striking the latch ring at a point over the stitch cams would cause rough places or small gaps to be cut in the latch ring, which in time would get bad enough to cause the latches to bend. Being made of cast iron the latch ring would not stand a great deal of polishing without ruining the ring. The introduction of steel inserts was a very simple yet effective way to overcome this trouble, for they do not become cut up nearly as fast as a cast iron surface. They can be polished very easily and quickly, and the cost of replacement when they do wear out is small.

### Locating the Latch Ring

On both B-5 and B-3 machines, careful attention must be given when locating the latch ring. Various kinds of trouble such as dropped stitches, bent latches, worn needle hooks, etc., can all be caused by an improperly located latch ring. On Model K, H H and R I machines, the latch rings are located at the factory and dowel pins are placed in the latch ring brackets of these machines to assure keeping them in proper position and to simplify removal and replacement. Enlarged holes in the latch ring brackets on B-5 and B-3 machines provide a simple means of adjustment so that the ring can be set in the desired position easily and quickly.

Frequently, various kinds of trouble such as misplaiting and dropped stitches are caused by locating latch rings to favor the position of the throat plates (7032-7870). In making some types of goods the throat plate must be kept close to the needles; on others, further from the needles. The best way out of such difficulty is to set the latch ring where it will give results, then use the adjustable type throat plate and set it to favor the angle at which the needles take the yarn.

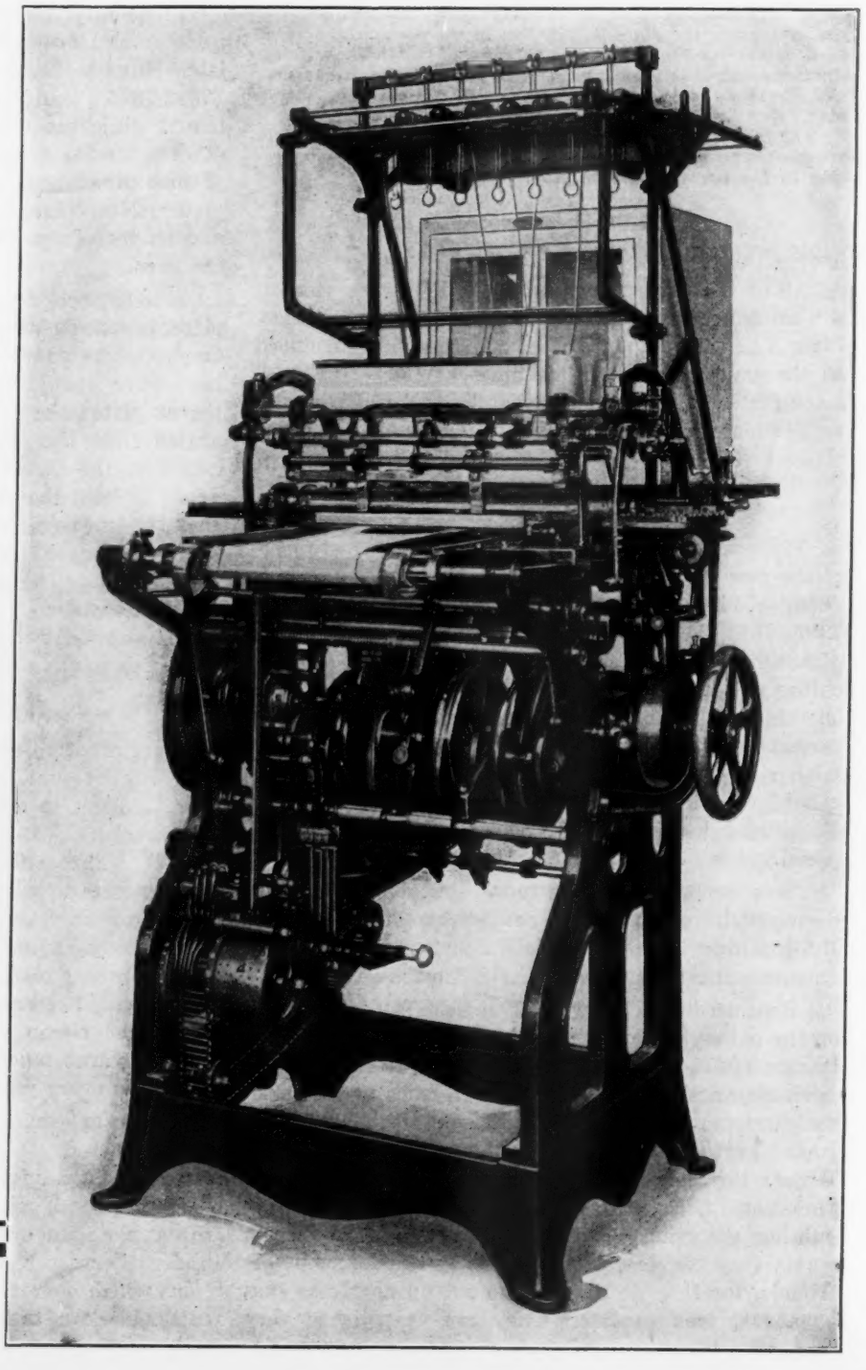
A great deal depends on the setting of the throat plate, especially when making plaited goods. For example, on a rayon-over-cotton number, the cotton or back yarn should run well up in the corner of the throat plate; the rayon or face yarn should be separated from the cotton by about ⅛-inch toward the center of the throat plate. It is advisable on plaited goods to keep the throat plate close to the needles so that the yarn will run high in the needle hooks, and thus prevent the face yarn from being sheared by the latches. The surface of the throat plate over which the various yarns pass should be slightly rounded off and well polished to prevent the yarn from cutting gaps in the plate at this point.

### The Yarn Shear Bracket

Barring accidents, yarn shear brackets should give very little trouble. Due to the small diameter it is more difficult to overcome various minor troubles on B-3 brackets (6133) than on the larger B-5 brackets (6137). Three things are important if the machine fixer expects to get results from a yarn shear bracket. First, at each yarn change the yarn being lifted out of action by the yarn finger *must get under the yarn shear bracket clamp* (7282-8431). Second, the yarn *must be held securely*, so that it will not pull out from under the clamp during yarn changes. Third, the various yarns *must get into the shear blades* and be cut off in every yarn change.

There are quite a number of factors which must be considered in connection with the three essential functions of a shear bracket. The following are important: The height of the bracket in relation to the throat plate and cylinder; the action of the thrust bars under the respective fingers; the pitch of the drum cams which operate the thrust bars; the length of the cutter block on the drum; the condition of the knives;

# When a mill is working against time . . . . . *these machines put extra minutes into every hour*



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the position of the yarn shear bracket guide (7028, B-5); the position of the yarn spring clamp (7419, B-3); and numerous other things.

Among the more common troubles which are caused by yarn shear bracket ailments are bad yarn changes which cause waste and seconds, pulled threads which are caused by yarn failing to go under the yarn clamp, or by the shear blades not cutting yarns off during yarn changes.

The shear bracket hold down plate (7350) is attached to the bottom of the bracket. It prevents the heel and toe from wadding up under the bracket and being cut by the shear blades when they open during yarn changes. The shear bracket hold down plate (7350) is used on all diameters of B-5 machines from 3½-inch upward which use the 6137 type bracket; all diameters from 3¼-inch downward are considered as B-3 machines and usually are equipped with a 6133 type bracket, which does not have a hold down plate.

Regardless of whether it is a B-5 or a B-3 machine, the shear bracket must be high enough to prevent the heel and toe from wadding up between the bottom of the bracket and the sinkers. As a rule it will be found satisfactory to keep the top surface of the shear bracket set on a horizontal plane with the throat plate.

### The Yarn Fingers

One of the most common forms of trouble with yarn changing fingers is that they will be cut by yarn constantly running through them. This is especially true where silk or rayon plaited numbers are made. The reason of course is that a certain amount of tension is required on the silk and rayon in making such numbers in order to control the respective yarns properly. Tension on the yarn will cause friction at the bottom of the hole in the finger and it does not take but a few weeks to cut a gap through which an ordinary knot will not pass. The result will be waste caused by press-offs, and there is but one remedy and that is to go over the fingers regularly, grind away the offending gap, and polish the hole with emery cord. The machine fixer should *know* the condition of the yarn changing fingers in his machines and not wait for the boss, the knitter, or, more often, a pile of waste, to remind him that it is time to re-polish fingers.

The fingers should work freely on the finger pin (6565) and they deserve a few drops of oil at least three times a week. The edges of the finger especially at the heel and under-side should be rounded off to assure fingers falling without binding against adjoining fingers. Very often when a new set of fingers or, say, two new fingers are put in, they will bind, cause bad yarn changes, seconds or waste. In such cases it is best to remove all fingers, polish both sides of each finger and the pin hole, then replace the fingers and make sure they work freely *without* the finger springs being attached.

It is a common thing to see yarn fingers with two or three springs attached to one finger. Now some reader may ask, Why in thunder would a sane machine fixer put three springs on one finger? The answer is that it is the laziest way to overcome some yarn changing trouble. If it requires more than one good spring to control a yarn finger properly something must be wrong with the finger, the thrust bar, the upper or lower guide plate, or the drum cams. Too many finger springs will cause broken fingers, worn thrust bars, and worn drum cams.

The heel and toe fingers should be carefully rounded and polished at the bottom of the hole so the slack can be pulled back while making the heel and toe gores without having a great deal of tension on the take-up spring.

### The Double Sole Finger

The double sole finger requires somewhat more attention than any of the others, due to its constant action while making the high splice and sole. The double sole finger should not rest on the top of the thrust bar when the finger is down, but the heel of the finger should rest on the throat plate, with the least bit of clearance between the double sole finger and the top of the thrust bar (7038). The amount of lift necessary to operate the double sole finger can be controlled by the eccentric button (6589), by the length of the prong on the thrust bar which comes in contact with the cams on the outside sinker ring, or by the shape of the operating end of the double sole thrust bar from the prong upward.

At times it will be found helpful to increase or decrease the lift of a thrust bar by bending it forward or backward in the narrow part just above the prong. However, this will also affect the height of the finger when it is out of action, and it must be done carefully to avoid breaking the thrust bar.

What has been said about yarn fingers will apply to both B-5 and B-3 machine parts shown on Plates XVII and XXI respectively.

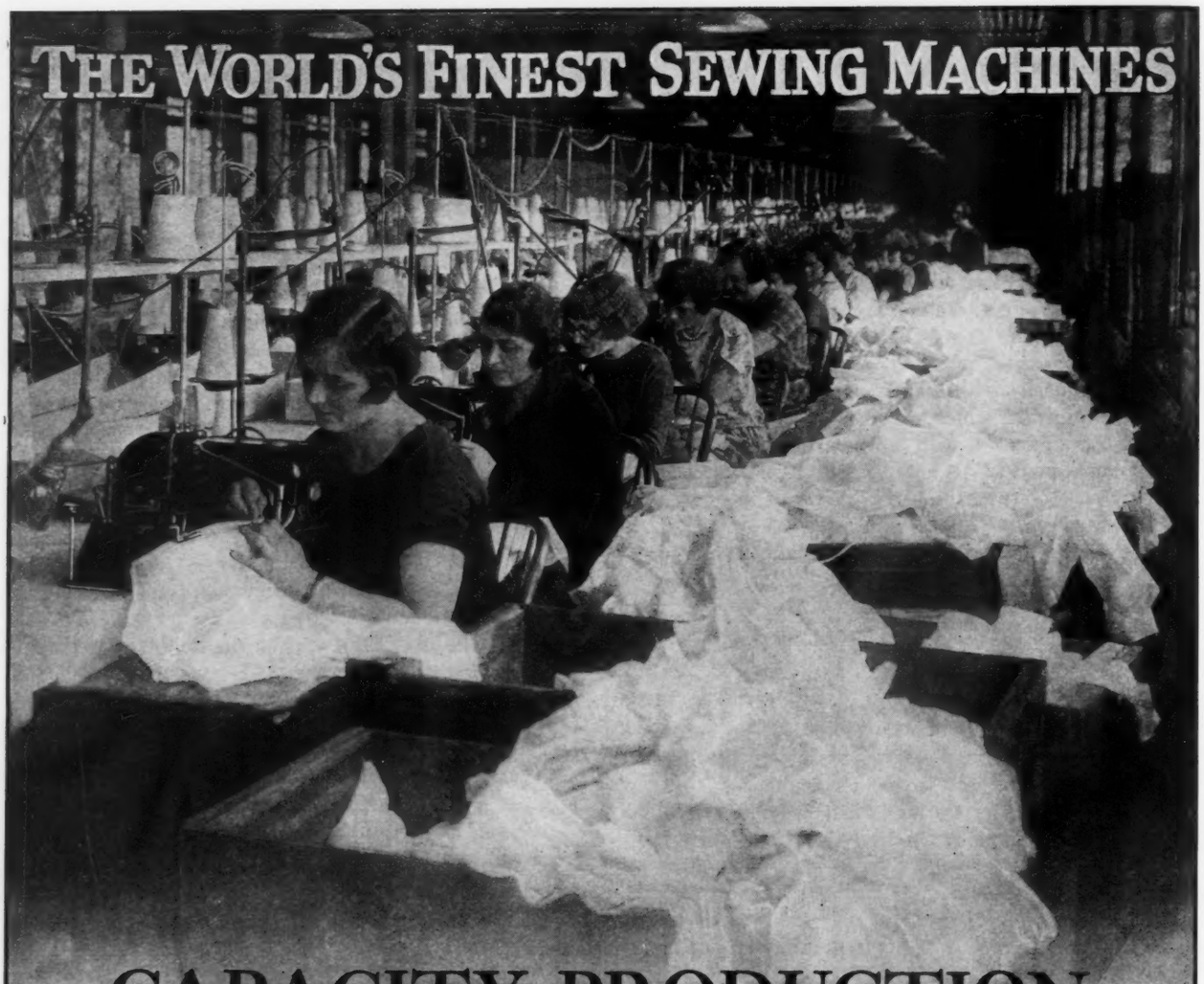
### The Thrust Bars

The various thrust bars shown on both plates are designed to give little trouble and long service if they receive a reasonable amount of attention. They should work freely through the upper and lower guide plates in their respective places, each bar should drop by its own weight as soon as it gets off of the drum cam. Both ends of the bars should be properly tempered to avoid unnecessary wear; the upper ends of plain bars should be slightly thinner than the rest of the bar and be lined up perfectly under the different fingers to avoid yarn changing troubles. The gap closer thrust bar serves a double purpose. It carries the gap closer adjusting plate (7034) which is used to operate the gap closer, and it also carries the thrust bar plate (7040) which is used to control the double sole slackening cam. The lifter actuating bar (8279) is used only on B-3 machines, to hold the left up-pick out of action and prevent it from striking the needle butts as soon as it completes picking the needles in the heel or toe. The sliding finger lever (5386) is used to move the yarn finger forward to assist the needles in taking the yarn at the first course of knitting and prevent bad starts. On the older model B-3 and B-5 machines a needle pushing device was used which answered the same purpose and which to my mind was a better arrangement than the present sliding finger idea.

The next discussion of Scott & Williams machines in this series will cover Plates XVIII and XXII.

CONTRIBUTOR No. 6038.

# THE WORLD'S FINEST SEWING MACHINES



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## How Do You Handle Press-Offs?

EDITOR COTTON:

We would appreciate a discussion in "KNITTING KINKS" on the best method of handling press-offs from full-fashioned machines. Having the operators stop their leggers to top on press-offs is perhaps the most common method used, yet some mills have toppers with legger bars to keep a supply of assorted lengths on hand, which in their opinion saves machine time. Other mills have been reported to save press-offs until enough equal lengths have been accumulated to run them off in sets.

In mills where legger bars are used, we should like to know if the legger operator pays the topper for doing this work which the legger is supposed to do, or does the company stand this expense?

This is a very important subject with all full-fashioned mills, and I should appreciate it very much if some of your readers would describe fully their methods of taking care of this problem, together with any other information on the subject that would be of interest.

CONTRIBUTOR NO. 6253.

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## Worn Striking Jacks — Both Sides Now Rest Their Case

**You full-fashioned readers constitute the jury in this debate on worn striking jacks, etc. Let us have your verdict . . . . . .**

THERE is a sequel to the discussion on worn striking jacks on full-fashioned machines, between "CONTRIBUTOR NO. 6214" and "CONTRIBUTOR NO. 6222". We believe it will be interesting to those who read the "off-the-record" discussion that appeared on this subject on page 94 of the July issue, as well as the original discussion which was published on page 79 of the June issue.

Subsequent to the correspondence quoted in the July issue, first we have a letter from the original inquirer, "CONTRIBUTOR NO. 6214", who refers to the last letter published in the discussion in the July issue. He says:

EDITOR COTTON: The latest reply of "CONTRIBUTOR NO. 6222" reminds me of the conscience-stricken child, who being reproved, finds other subjects more convenient to discuss than that pertaining to his error. I had judged that my worthy opponent was more academic than scientific and I might just as easily have observed from his letters that he had had legal training which would so far develop his imagination as to enable him to really believe that striking jacks wear unformly. I might too assume that he has been an ardent student of Aesop, Grimm and Defoe.

More important matters demand my attention also at the present time, but one of these days I am going to take my jack gauge and visit my friend and prove to him that Lincoln's philosophy about fooling people is applicable to this case.

CONTRIBUTOR NO. 6214.

This comment was sent to "CONTRIBUTOR NO. 6222" who replied:

EDITOR COTTON: I have taken the time to discuss this matter of worn jacks, since receiving your last letter, with one of the men who first had full-fashioned machines in the South. He is recognized as an authority on full-fashioned operation. Inasmuch as I am open-minded at all times, I wanted to have my views further confirmed if correct, or to find out my error in case I was wrong. He is positive that full-fashioned jacks do not wear unevenly where the machines are properly cared for. I further showed him my summary on the wear of jacks, which he pronounced correct. I enclose this summary which, I believe, covers the subject of worn jacks. Please bear in mind that this is backed by the opinion of men who have had years of experience in this game.

As to the gentleman of the unevenly worn jacks, my conscience does not hurt me at all, but it would if I had to re-grind my verge plates every two or three months as he says he does. No, I have not been a prolific reader of fables, nor do I let them influence my ideas, but I do believe in facts, and I fail to see any offered by him to back up his statements. He simply assumed that jacks wore unevenly, and then shut his mind to the facts. His letters are filled with golfing stories and comments on me, but no reason to show why his assumption is correct. So be it, and let's let it rest.

CONTRIBUTOR NO. 6222.

The summary on the subject of unevenly worn jacks in full-fashioned machines, which "CONTRIBUTOR NO. 6222" referred to and submitted with his letter follows:

"The action of the slur cock on the jacks of a full-fashioned machine is regular and slight where the proper adjustments and settings are made, and when they are kept greased with a good quality of grease. The slur clock traveling back and forth exerts the same pressure on all jacks, unless something causes more pressure on some than on others. When such is the case, then the cause of this difference in pressure should be found and remedied.

"The causes of unevenly worn jacks can be classified as follows:

"1. The slur cock set in too far, so that the sinker does not have the proper clearance at the verge plate. This will cause binding and unevenly worn jacks will result if the verge plate is not even (which should not be, of course).

"2. Defective jacks, in that some are soft and some are hard. This naturally is remedied by using good jacks, just as no one would use needles of different temper.

"3. A sinker too tight in the brass will cause more pressure on the jack that pushes it than on the others. A good way to remedy that is to roughen one edge of a divider and work it in the slot until the sinker can move freely.

"4. If a jack becomes tight in the cone wall, it will wear more than the jacks which operate freely. This binding is often caused by inferior grease which gums and hardens or by trash getting in the walls. In either case it should not be allowed to get that way, in the first place, and then, certainly it should be quickly cleaned. Needless to state, a good grease

should be used.

"5. If the head is set at an angle, the side closer to the back will naturally wear the jacks more than at the other end. This will perhaps cause no trouble unless the jacks are taken out and then put back, after mixing. Naturally, there will then be a variation. But if they are put back in the same places from which they came, the machine will function without trouble. This does not mean that the heads should be set any way but straight, when setting up with new jacks.

"In cases where there are uneven jacks, as in item 5, for example, the best procedure is to remove them, put in new jacks, set the machine correctly. The jacks removed can be used to fill in singly when needed, where they will fit, later."

All of the correspondence in this case was read and studied by another correspondent who had not previously participated in the discussion, and whom we shall call Mr. X. He has kindly given the following comments:

"EDITOR COTTON: With reference to the file of discussion on 'Why Striking Jacks Wear Unevenly', I am too busy these days and my time is too much taken up in more weighty matters to allow myself to get into any triangular argument with the younger fellows with their enthusiasm for scrapping rather than thinking straight through.

"Were I called on to be a deciding factor in the argument, I would say that the question of 'CONTRIBUTOR NO. 6214' and the position he has taken on it is more hypothetical than actual and the position 'CONTRIBUTOR NO. 6222' has taken in answering it is more theoretical than practical.

"Analyzing first my position in reference to the position of 'CONTRIBUTOR NO. 6214', the inquirer, I would say that there is a tendency for striking jacks to wear unevenly, but no more so than there is a tendency for working parts of any machine to wear unevenly, that theoretically the slur cock, striking jack and sinker assembly of a full-fashioned machine is designed to prevent uneven wearing. Yet we know when theory is reduced to practice that it rarely ever turns out 100 per cent correct because there is very little mechanics in which the human element can escape, and 'CONTRIBUTOR NO. 6214' has answered his own question over and over again in referring to tolerance allowed on new parts, uneven tempering, etc. These things must be recognized.

"On the other hand, he rather refuses to admit that the particular trouble on his machines has not been under his constant personal attention all of the time of their operation, and that it is thoroughly possible that his machine fixer might make bad adjustments of the machines, later correct them after harm had been done, and he never find the machine out of adjustment. It is also possible that at times the machine has been neglected so far as careful cleaning and oiling is concerned, and that this condition escaped his attention.

"To the contrary, 'CONTRIBUTOR NO. 6222' has been just about as persistent that the entire assembly of sinker action has been so designed that it was impossible for it to wear uneven except for maladjustment of actuating parts and careless oiling and cleaning of machines. But he has given 'CONTRIBUTOR NO. 6214' the major causes for sinkers wearing unevenly, and I now thing that they would both agree that with some compromising on the part of each that they both have gained something from their arguments in spite of the fact that one of them has been too hypothetical and the other too theoretical.—MR. X.

## More About Boiled-off Yarn

EDITOR COTTON:

The advantages and disadvantages of using boiled-off yarn in full-fashioned hosiery are asked by "CONTRIBUTOR NO. 6093" in a recent issue of "KNITTING KINKS."

The use of boiled-off yarn in knitting has been practiced for a good many years in making gloves, and garments of all kinds that have to be cut and tailored to shape. The boiled-off yarn is knitted damp; that is, the silk is boiled-off in a soap bath, washed, whizzed in the extractor, wound without drying, and knitted damp from the cone. The goods are then taken to the dyehouse and the finished cloth made into the garments for which the cloth is intended. This kind of cloth is not supposed to have much elasticity because the garments are sold in various sizes to suit the wearer and made to fit. In boiling-off, a shrinkage of the fiber takes place and in dyeing the knitted fabric shrinks some more, and when it is dried and finished, usually on a tentering frame, it is stretched a given width making the fabric elastic enough to fit the purpose for which it is prepared.

In knitting full-fashioned hosiery, if boiled-off silk is used and dyed afterwards it would make the cost so high as to compare unfavorably with the cost of ingrain, yarn-dyed hosiery, with all the defects inherent to dip-dyed hosiery; chafings, wrinkles, streaked, spots, etc. Besides that, as this contributor acknowledges, the stocking having lost much elasticity in the process would make it imperative that sizes should be knitted to fit not only the foot, but also the length, ankle, calf, and knee of the buyers, and the cost of keeping a stock against orders would be almost prohibitive to most hosiery manufacturers.

Reading the letter of this contributor, I got the impression that he believes gum, as well as throwing material, is used in preparing silk. He said: "The factor of irregularity in the uneven application of gum and throwing material has been eliminated." To my knowledge, the throwing materials used in preparing any kind of silk are soap, oil, and softeners of one kind or another, and the irregularities that are often found in the threads are not caused or put in by throwsters. The thin and thick places to which this correspondent evidently alludes, thinking they are the cause of uneven fabric, are already in the yarn when the throwster receives it and he can do nothing to remedy it. That is the reason he has never been able to determine that "an evener fabric" would be the result by knitting with boiled-off silk. In knitting with a yarn that has

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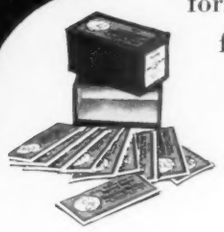

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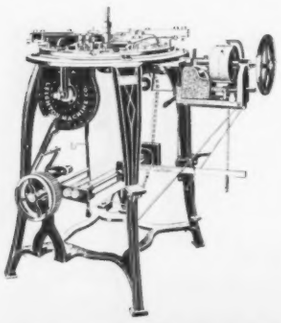

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# TORRINGTON *Latch* NEEDLES

lengths of uneven diameter, the defect will show more prominently than when the same yarn is woven into a fabric where the threads lay flat and straight, and for this reason silk to be used for knitting should be selected to be of the highest quality, and of even deniers throughout if results are to be of the best.

There are some parts of the hose that could be knitted to advantage with boiled-off silk, like the sole of the foot, the re-inforcements, the heel and toe, but as to knitting the whole stocking—there is nothing to be gained by it, and in my opinion, there is much to be said against it.

The greatest objection, in my opinion, is the difficulty of dyeing silk hosiery in batches containing silk that has been boiled-off at different times. As any hosiery knitter knows, a batch of hosiery is not dyed as soon as it comes out of the machine. A great deal of stock in the gray has to be kept in bins waiting for orders. When goods are in the gray, provided they are kept dry, there is the sericin covering the silk thread that serves as a protection against oxidation and yellowing, and can be kept a longer time than goods knited with boiled-off silk. A stock of boiled-off silk hosiery that is kept for several weeks or months, and then mixed with stock coming fresh from the machines will dye in several shades because the unprotected boiled-off silk will yellow a lot sooner than the gray silk would, and the dyer will be kept in hot water most of the time with uneven batches, and he will be unable to correct the situation with that stock of different ages.

That, and the ease in which threads are pulled in knitted goods of boiled-off silk while going from one operation to the other through the mill with the consequent damage to the goods resulting therefrom, are, in my opinion, sufficient reasons to discourage knitting full-fashioned hosiery from boiled-off silk.

CONTRIBUTOR NO. 6127.

## "Zebra" or "Tiger" Stripes

EDITOR COTTON:

In reference to the complaint of "CONTRIBUTOR NO. 6146" in the October issue of COTTON about "zebra stripes" or "tiger stripes" on the re-inforced parts of his full fashioned hosiery when the stockings are dyed and boarded, will say that this complaint has been heard many times before, and the trouble is caused by using boiled-off silk along with silk in the gum, with the mistaken idea that it is better, and the re-inforcement is stronger. However, when boiled-off silk is used with the silk in the gray, when it is taken to the dyehouse and again boiled off, the silk in the re-inforced parts will then receive an extra boil-off and the affinity of that silk for the dyestuffs will be reduced.

Any silk dyer is aware of the fact that the longer the silk is worked in a soap bath the more the affinity for the dyestuff is reduced, and could advise the party in charge of the knitting room to that effect, but the dyer is never consulted about the making up of the fabric. He is supposed to make the best of what he receives in the dyehouse, and many, many times he is held responsible for the blunders of others who should know, but whose judgment in many cases is not what it should be.

The writer has worked with hosiery that had boiled-off silk knitted in the heel to make it stronger where that part of the stocking rubs against the top of the shoe, and in order to make the knitting still tighter in that particular place, the silk was lubricated with coal oil, and when it was dyed it was impossible to get that part to match the rest of the stocking. Many arguments ensued therefrom, but no good results were ever obtained until that lubricant was changed and the boiled-off silk eliminated.

At another time, in order to save a few cents, the knitter re-inforced the soles, heels and toes with spun silk, and, as spun silk is also made up with boiled-off silk waste, that hosiery, when dyed and finished, showed up numerous tiger stripes, even though the raw silk was plaited over the spun silk. Not until that spun silk was taken out were those tiger stripes eliminated.

There is absolutely no reason why a good and sufficiently strong re-inforcement could not be obtained by using raw silk altogether. There are sources enough of trouble connected with dyeing, over which there is no control, and we should at least try to avoid what is known to cause bad work, and, using boiled-off silk along with silk in the gray, will cause uneven dyeing in the finished product.

If anyone wants to check up on this assertion he can take a pair of hose and de-gum them by boiling them off a couple of times separately, then put them in to boil off and dye them with a regular lot. He will find out that the much boiled-off pair has dyed considerably lighter than the regular lot. In this way he will be persuaded that putting boiled-off silk in any part of the stocking is not the thing to do, and he will find that the results will be much better if he eliminates it altogether and uses a six-thread raw silk with his three-thread hosiery.

CONTRIBUTOR NO. 6164.

## Cost of Needles, Etc. on Full-Fashioned

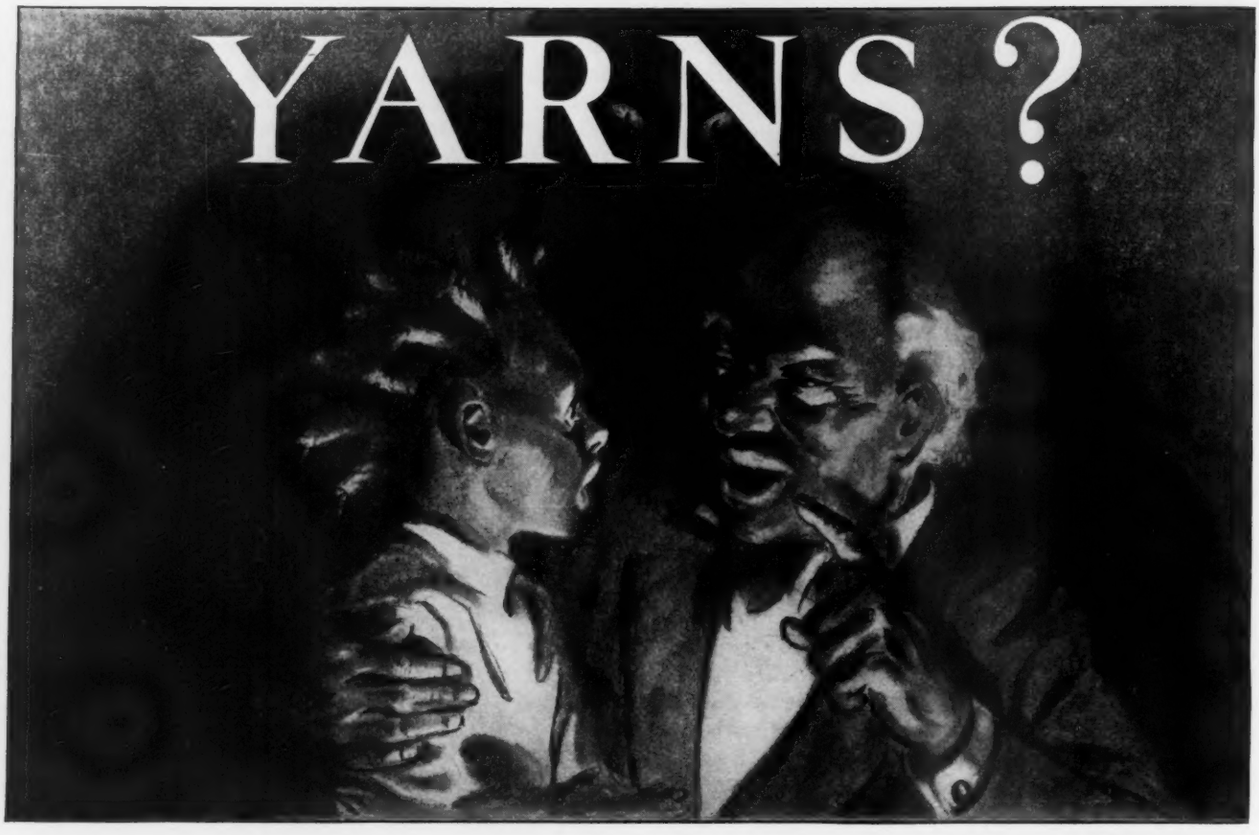
EDITOR COTTON:

I note the letter from "CONTRIBUTOR NO. 6183" on page 77 of March COTTON with regard to the consumption of needles, sinkers, etc., on 42-gauge full-fashioned hosiery. This contributor referred to the letter from another man on page 98 of your December issue, and they both gave their cost of needles, sinkers, and other parts, per dozen of hose.

As a contribution to this discussion I would like to say that the cost of our needles, sinkers, and parts, all combined, amounts to .028 per dozen hose. The remainder of our parts in repairs costs us .021. Our factory supplies run .025, the same as the figure given by "CONTRIBUTOR NO. 6183".

Our needle breakage runs around two needles per dozen. We think that this will vary according to the style of welt made in the stocking. We make a great many picots in our welt, and this, of course, has its effect on the needle breakage.

CONTRIBUTOR NO. 6217.

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# FRANKLIN PROCESS

## COTTON YARNS AND CUSTOM YARN DYEING

No. 414

# THE KNIT GOODS MARKETS . .

WITH no style offerings to vary the summer monotony of the hosiery market, it presents a somber aspect. As explained by both, neither manufacturers nor retailers have been eager for innovations of a radical character since the trade began to manifest uneasiness over the effect of sharper price changes, to be felt in their full force probably in another six to eight weeks.

Manufacturers and jobbers were in accord during the latter part of July that buyers for leading retail stores were exercising their prerogative to do the remainder of their fall buying later, and the buyers admit this to be the case. Some have bought as freely as ordinarily for September-October deliveries. These goods, buyers state, will come in at comparatively low prices and will be priced on replacement basis. Just what this may mean is indicated in the advances announced as of July 1 by the Apex Hosiery Co., Philadelphia, whose president, William Meyer, is president of the National Association of Hosiery Manufacturers and also of the Schuylkill Valley Mills, Spring City, Pa., another full-fashioned mill, selling directly to the retail trade.

After having made three advances of 25 cents a dozen each on its former $4 numbers, the Apex at the beginning of last month increased prices of all numbers by $1.25 a dozen, affecting an advance to $6 for the one-time $4 a dozen 42 gauge numbers. This is now the company's price to jobbers, for whom it has been moved up 50 per cent. By the time the jobber adds an average normal profit, the retailer will be paying easily a dollar a dozen more than he formerly was exacting from the consumer, who in turn may be expected to be called on for 35 cents a pair more than she was paying until a few weeks ago.

Depending on increased earning power and the consumer's ability to absorb the added cost, say buyers for some large retailers, there may be a lull in the hosiery markets by early fall, due to retailer reluctance to buy winter goods and the usual Christmas finery well in advance, in the event the consumer balks.

### Possibility of Shortage Less Remote

There is seen a not remote possibility that within a few weeks distributors will view with more seriousness than has been manifest, the strong probability of a real shortage of hosiery. Such a prospect would seem to be indicated in letters from the Berkshire Knitting Mills and the Rosedale Knitting Co., the two largest full-fashioned organizations, the Berkshire on July 6 advising customers that, by reason of a strike of hosiery workers in Reading, "It will be impossible for us to fulfill delivery promises on orders" then on file, and giving customers "the privilege of canceling any orders on file" to enable them to cover elsewhere for their needs. About the same time a somewhat similar letter was received from the Rosedale mill by its trade.

A jobber having a contract for low-price cotton-rayon combination hosiery for delivery in the first week in July is not only much upset by its non-delivery, but has had it intimated that it may not be shipped before October. The manufacturer's alibi is that he cannot get delivery of the yarn and has been advised that it may not be shipped until along in September, which raises the question whether the hosiery will, if ever, reach the jobber before October. Some delayed deliveries are charged by buyers to sellers having booked their mills up at higher prices than were obtainable when buyers were besieged by salesmen.

Many mills not affected by strikes ceased quoting during July, accepting no orders whatever. A Texas jobber was alarmed over prospect of non-delivery of a 2,000-dozen order from a New Jersey manufacturer. Through an intermediary in this case, the jobber was given assurance that deliveries would be completed regardless of whether the goods could be made up under the then prevailing cost schedules or under the code then remaining to be adopted. This case was typical of the uneasiness in the trade, besides hesitancy on the part of some, because of a feeling of uncertainty, to stock up in advance. At the time, however, so many of the mills were turning orders down that it was difficult to obtain acceptance of orders. Then too, buyers who intended to contract were delaying because of the already higher quotations. All of which seems contributory to a prospective scarcity of desirable types of silk full-fashioned stockings at a perhaps critical moment.

The Apex mill maintained a two-shift, six-day week schedule during the greater part of July. Despite the company's sharp increases in prices and putting its lowest price numbers in the $6 a dozen bracket. It appeared, however, that a majority of mills in Philadelphia, with Reading undergoing a forced production moratorium, were those producing popular price lines. And there seemed no scarcity of 39-gauge stockings with cotton hem and sole, for the 39-cent retail price, as noted in a number of exclusively hosiery shops and popular price shoe stores carrying hosiery as a side line or leader. Quite a few mills reported a slump in orders following announcement of price increases.

The experience of some retailers boasting of a somewhat exclusive clientele would appear to indicate that price raising by a slow process can be accomplished without much, if any, consumer complaint. A women's ready-to-wear organization having large stores in the more fashionable shopping sections of New York and Philadelphia had been running, with much success, periodical sales of 45-gauge stockings with Jacquard hem, and silk to toe, at 50 cents. The identical number was, for the first time, on sale in July at 59 cents, and possessed no

# MONEL METAL... and NICKEL-CLAD STEEL

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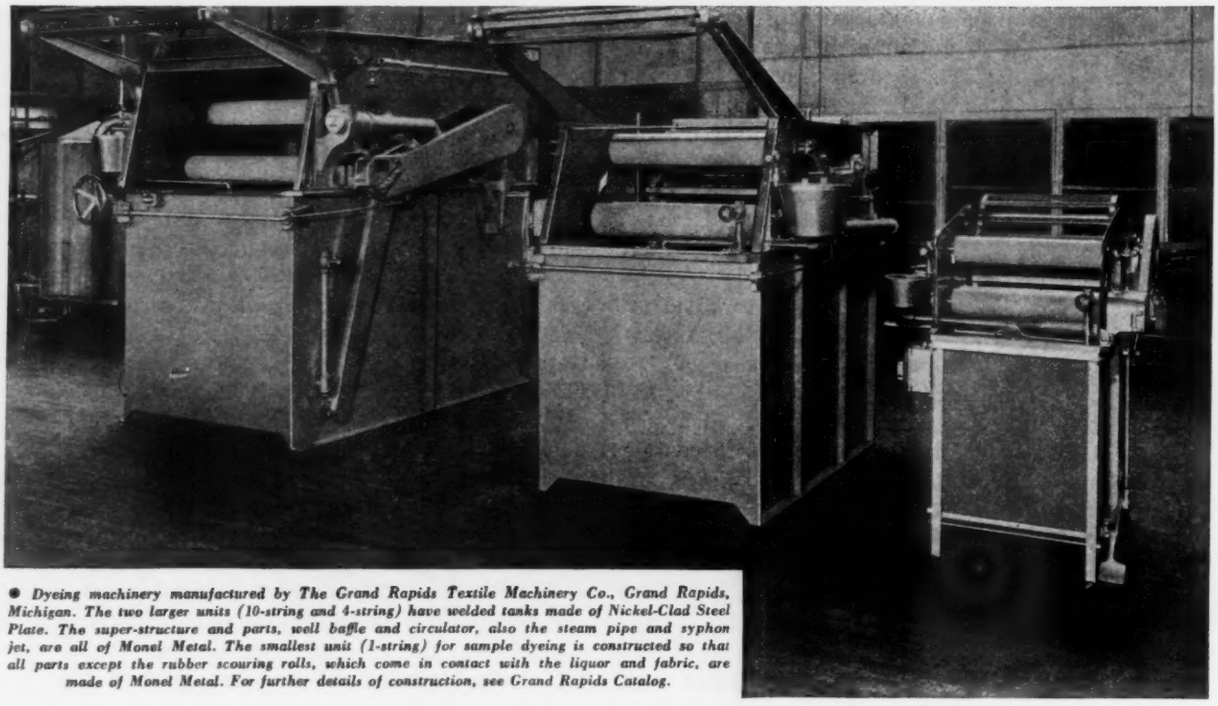

● *Dyeing machinery manufactured by The Grand Rapids Textile Machinery Co., Grand Rapids, Michigan. The two larger units (10-string and 4-string) have welded tanks made of Nickel-Clad Steel Plate. The super-structure and parts, well baffle and circulator, also the steam pipe and syphon jet, are all of Monel Metal. The smallest unit (1-string) for sample dyeing is constructed so that all parts except the rubber scouring rolls, which come in contact with the liquor and fabric, are made of Monel Metal. For further details of construction, see Grand Rapids Catalog.*

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● We congratulate the Grand Rapids Textile Machinery Company on the ingenious way they have utilized practically all the advantages of Monel Metal and Nickel-Clad Steel, in the construction of their new all-metal dyeing machines.

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Greater speed in turning out the work results because no boiling out is necessary to clean these machines. They are cleaned so quickly that frequent changes of dyes are possible.

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Costs are also cut by the smaller amount of dyestuff used. For there is no absorption of large quantities, as is the case with equipment made of porous or retentive materials.

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Quality is so improved, production so increased and costs so lowered that, in dollars and cents, it pays dyehouse operators to replace their old-fashioned equipment with these "Shield's Method" dyeing machines. Send the coupon and get all the facts about Monel Metal and Nickel-Clad Steel dyeing equipment.

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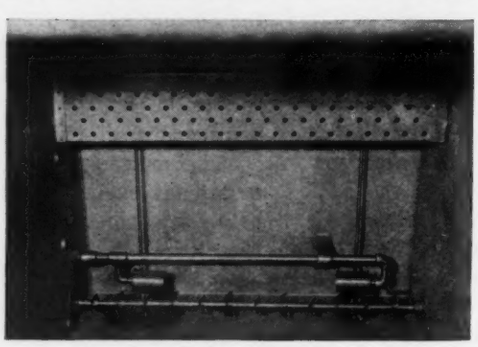

● *Close-up view showing Monel Metal well baffle, steam pipe and syphon jets, circulator and drains of 10-string Nickel-Clad Steel dyeing machine manufactured by Grand Rapids Textile Machinery Co., Grand Rapids, Michigan — See Grand Rapids Catalog for additional details.*

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

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less pull than at any of the 50 cent sales. The difficulty in improving on prices, it is said in leading retail stores, is experienced with numbers hitherto retailing for one dollar to $1.35 a pair.

## Need Additional Hosiery Machines to Balance Full-Fashioned Plants

In the front row of machine builders and manufacturers contemplating plant modernization, 45-gauge is being stressed as the coming popular price stocking in the better range. Next to 45- as a moderate price number, 51-gauge seems to be pushing forward. In any event, according to factors who may be assumed to know what they are talking about when discussing plant rehabilitation, and some admittedly well informed from the strictly merchandising standpoint, much of the 1933 new installation will be of 45- and 51-gauge machinery, except in balancing plants as to leggers and footers for better adapting them to requirements under the code. Considerable full-fashioned hosiery machinery has been bought for export, Canada and Australia adding new equipment, presumably for more readily meeting home demand and foreign competition. The type of machines for installation beyond the borders of the U. S. is not stated.

In reply to a question whether there is manufacturer interest in 42-gauge machines, an authority on the subject said, "not many are bought." There is, however, a demand for 42-gauge used machines, some manufacturers regarding them suited to the manufacture of ordinarily acceptable stockings for the popular price bracket. It will be recalled that it was this gauge, selling for $4 by the Berkshire and Apex mills, was the first to be marked higher by 25 cents a dozen, the announcements of such increases invariably causing buyers for retail stores to "stand up and take notice" of a trend to higher values.

More than one-half of the machine sections in place a year ago were of 42-gauge, compared with around 26 per cent 45-gauge and less than two per cent 51-gauge, and 16 per cent of 36, according to a survey as of March, 1932.

### Mr. Botts on "Gauge"

Some of the department store buyers have been trying to make it appear that 39-gauge stockings will continue to be popular for the basement departments and that therefore machinery of this gauge will be kept well engaged. While this may be true, it is the common impression that most of the 39-gauge machines are so old and worn that they cannot be economically operated. The plant of the Lincoln Hosiery Corporation in Philadelphia, said to comprise more 39-gauge than any other mill, has been idle for some weeks, since the resignation of Samuel L. Kahman as president and general manager. This is interpreted locally as supporting the proposal that economical operation in that plant was impossible.

John Botts, president of Harrington & Waring, widely known selling agents, would eliminate as a descriptive term "gauge" and substitute "needles", which, he maintains, truly indicates gauge, while the latter word often is designedly misleading as to number of needles—which may be made a trade practice offense in the hosiery code. It is the experience of retailers that neither term carries much weight among shoppers who may be satisfied with the fit and appearance of hosiery that proves really serviceable.

### Many Working on "Ringless" Device

While some profess to consider it doubtful that the perfect device for attachment to full-fashioned machines for producing absolutely ringless silk stockings has yet to be presented, it is a widespread impression that it is on the way, is not far distant, and that eventually every full-fashioned machine will be equipped with ringless attachments. It seems a number of patents for such devices are pending and that it might be desirable to assemble all under a single control before formally launching "ringless" machinery.

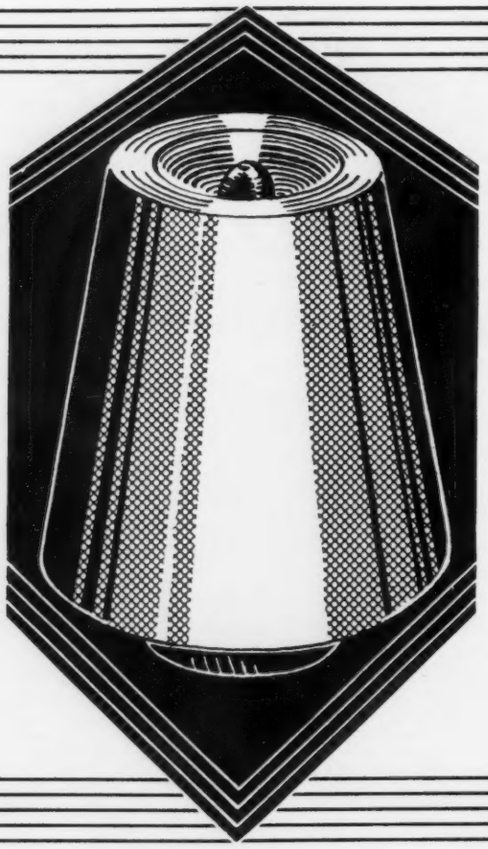
Among the several machine builders working on ringless devices is the Rosedale, Pa., branch of the Karl Lieberknecht Company, and it is understood a few hosiery manufacturers have attachments of their own conception with which they are experimenting. Paul Krenkel, Philadelphia, inventor of the triple tension attachment for the machines employing three-thread silk carriers, states all of the 150 machines in the Oakbrook plant at Reading have been equipped with complete attachments, and that they are in use in the Apex and Brownhill & Kramer mills in Philadelphia, with others ready for installation so soon as machinists for Mr. Krenkel can supply them.

Brownhill & Kramer, by the way, are reported meeting with much success with sales of one of their somewhat recent creations in women's full-fashioned —a Bemberg top on silk leg, the stocking being quoted recently at $4.50 a dozen. It is described by several buyers as "a well-knit 39 gauge", which would seem to be indicated by the price.

Mills received as late as the latter part of July, sizeable orders for their 42-gauge number, formerly $4 a dozen, but buyers were offering prices in a range $4.55 to $4.75. Their offers are said to have been declined by even manufacturers in distress from want of orders. According to manufacturers, chain stores have a great deal of silk hosiery on order at the 1933 low prices, to be delivered in early fall, some contracts said to run to the end of the year. Whether it will be possible to fill such contracts under the code is a question which manufacturers are discussing.

### See Better Future for Seamless

Should prices for full-fashioned attain the levels some factors predict for them, there is a belief among seamless manufacturers that their product will show better in the way of sales and margin of profit. Improvements in seamless equipment have been gone further than in flat knitting machines, it is maintained, presenting features that in a few respects closely approximate some of the innovations in full-fashioned that constitute strong talking



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points. Seamless construction, backed by prices that better fit the pocketbook of the masses, should give the hosiery manufacturing body in the South where most of the circular knit is produced, a more important position in the American hosiery industry, it is suggested by mill executives commenting on a finding by Dr. George W. Taylor, of the Industrial Research Bureau of the University of Pennsylvania, in a report of a survey as of March 1932 that "It seems reasonable to estimate that during the past months the southern area has been responsible for nearly 20 per cent of the total production of women's full-fashioned hosiery".

### Mills Jump Hosiery Output

The extent to which production of hosiery was speeded up in apparent preparation for the presumably higher price era attributable to prospective rigid enforcement of the national recovery act is indicated in the statistical reports of 285 identical establishments, representing 341 mills, for May 1933 and May 1932, to the Bureau of Census of the Department of Commerce. Production, all classes of hosiery, leaped to 5,820,276 dozens in May from 3,891,295 dozens in the corresponding month of 1932. Other gains over the 1932 May were: Orders booked, 8,102,774 dozens, from 4,499,873; net shipments, 5,643,456 dozens, from 4,329,161; unfilled orders, 6,475,844 dozens, from 999,390. Stocks in mills at the end of May amounted to 8,958,059 dozens, a decline of only 332,807 dozens.

Unfilled orders at the end of May for women's full-fashioned hosiery totaled 1,182,326 dozens, a gain from 409,022 dozens in May 1932; for women's seamless there was an increase in unfilled orders to 538,010 from 195,883. The decline in stocks in mills, of both seamless and full-fashioned, was insignificant. Orders booked for women's full-fashioned in May increased to 2,637,607 dozens from 1,775,440, and net shipments advanced to 2,269,585 dozens from 1,739,521.

Outstanding items in matter of unfilled orders at the end of May were infants' stockings, increased to 686,294 dozens from 97,062, and the classification boys', misses' and children's, increased to 1,020,607 dozens from 386,038. A considerable increase is shown in the use of rayon and cotton combination for men's half-hose, and silk and cotton combination for women's full-fashioned.

## Cotton Underwear Mills and Jobbers in a Tense Wait for Industrial Code

As late as the issuance of the cotton code and announcement of the processing tax on cotton by Secretary of Agriculture Wallace manufacturers of cotton underwear were receiving orders "at old prices". Such offers of course were laughed at by manufacturers and in some mill offices were given a flat turndown under management blanket instruction not to annoy executives with them.

Manufacturers, who had not submitted their code, were not quoting, and as a general proposition, were encouraging no jobbers to submit orders. There


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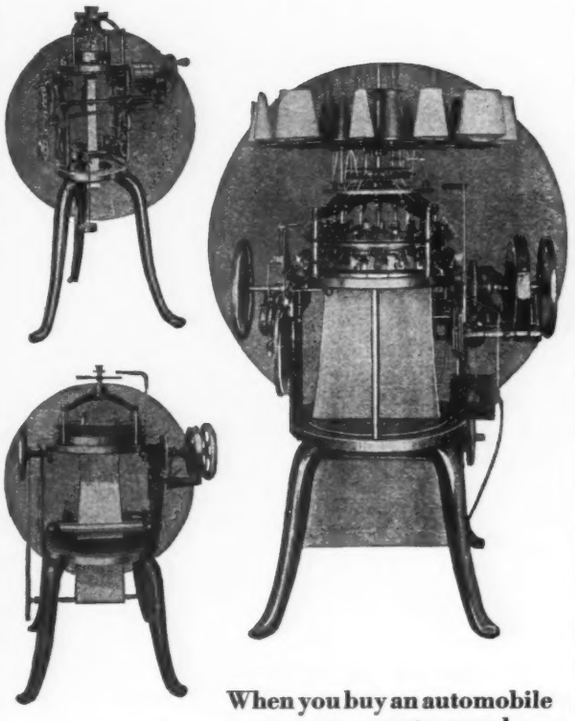

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*Jersey Machines* Plain and Fancy Stitches.

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*Special Knitting Machines* From ¼ inch to 36 inches.

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H. BRINTON COMPANY

3700 Kensington Ave., Phila.

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BRINTON CIRCULAR KNITTING MACHINES

of EVERY Kind for EVERY Purpose

were spot goods in some mills, which seemed to be immediately available at mutually satisfactory prices. But ordinarily these lots were not representative of the more readily saleable items. It was the policy of some manufacturers not rated as in the larger class to stand pat on what were believed to be near future replacement value. "If anybody buys underwear from us", said one well known mill management, "they will pay 'period prices' and that means prices covering every cent of added cost put on under government authority or to be put on, whether for summer weights or winter goods".

Not in many years, it was observed, were the heavy weight underwear markets against buyers to the extent prevailing in July. Jobbers have had little difficulty in obtaining retailer small orders for early fall—selling to the consuming element, from which "rebellion" is expected to be voiced later. It was noted by manufacturers that while jobbers are selling to the smaller retailers, the department stores of greater magnitude have been making little provision for escaping the price lift and that their customers will, mainly, be asked as much as 50 per cent over last year's prices for the better types of cotton union suits and even more for underwear containing a relatively large per cent of wool.

It was developed last month that some of the jobbers who had underestimated their winter weight requirements and offered supplemental orders were not satisfied with the explanation of manufacturers for refusal to quote. The common reason advanced for withholding their lines from sale was that "no one knew what underwear might have to fetch after they had submitted and gotten acceptance of a code for their industry".

Some jobbers commenting on this explanation said they "believed the manufacturers were stalling, along with a few other industries, for an advantage from late adoption of a code". Boiled down, manufacturers simply were doing what distributors have been doing—taking steps for self protection—and the allegation has been heard that some jobbers own underwear which they are holding for moderate advances, rather than offer the goods at replacement basis, as a possible means for "letting the consumer down easy".

Retailers were well supplied with rayon underwear, which last month was being passed over the counter at prices which would show no profit on like goods at manufacturers' then current prices. This is one aspect of the underwear situation that is annoying manufacturers and wholesale distributors.

## Fair Stage of Activity Reported by Knitted Outerwear Manufacturers

Probably 50 per cent of the manufacturers of men's, women's and boys' sweaters are supplied with business sufficient to keep their plants well occupied until well into next month. Others have had to struggle against continually increasing prices for worsted yarns and inability, through lack of capital, to finance purchases on the eve of successive flights. Some types of dyed yarn quoted in late July around $1.60 a pound were available in January for 80 cents, and spinners stated at the time that buying by manufacturers was being "retarded by high prices".

Sweater prices were set at the opening for fall numbers, early in the spring. There necessarily have been some price increases, but manufacturers owning low price yarn are filling orders, while mills which must buy yarn on today's market are said to be taking only what business distributors cannot place elsewhere, their usual sources of supply reporting a sold up condition. Mills selling to large retailers are represented as being especially under pressure. Sweaters, it appears, constitute one item which is being taken in now for fall. Numbers of department stores with orders placed for September delivery were calling the goods in all through July, and not asking for fall dating. Manufacturers who could get the goods out hurried then to the big retailers and were thus prevented booking some of the spot business that was offered last month.

Sweater prices will be materially higher under the code which manufacturers have submitted to the government. Some mills are operating 58 hours a week, on overtime schedules. As their code calls for a maximum of 40 hours, their overhead obviously will be higher, to say nothing of increasing yarn cost and later the imposition of a processing tax, which probably will be higher than that on cotton. It is predicted that popular price sweaters will cost the ultimate buyer a dollar more per garment once the organized manufacturers' and the spinners' codes are effective.

### Philadelphia Cotton Yarn Comment

Immediately the differentials for single and two-ply combed peeler, natural and mercerized, were received in the Philadelphia trade, Boger & Crawford, mercerizers, notified their trade of an advance of ten per cent in prices of yarn on contract, this, in its application to many contracts, amounting to materially less than the differentials recommended at a meeting of fine yarn spinners.

During a meeting of the Mercerizers' Association of America at which the subject of a code for the mercerizing "industry" was introduced, Robert C. Boger raised the point that as gray yarn is a finished product, mercerizing simply is a process or treatment, and therefore not an industry in the sense of conversion of raw and semi-raw materials into finished goods. A like view was unofficially expressed by fine yarn dyers having membership in the National Textile Processors Guild.

According to opinions of some mercerizers of cotton yarns, the proposed addition of 10 cents a pound to late contracts for 60s mercerized 2-ply and the differentials on finer counts tends to make rayon a sharp competitor.

It was maintained by a spinner commenting on current quotations on contract combed peeler and mercerized yarns with the recommended differential added, that the price for 120s combed peeler is on the border line of the cost of 73 per seriplane silk on the basis of July average quotations for raw.

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May we send you further details, or have one of our practical men call?

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MFGRS. of TEXTILE SOAPS, SOFTENERS, SULPHONATED OILS & SPECIALTIES
AMBER and WESTMORELAND STS., PHILADELPHIA, PA.
and in ST. CATHARINES, ONTARIO, CANADA

# REVIEW OF THE YARN MARKET

**Philadelphia, Pa., July 17, 1933.**

PROPOSED codes as submitted to the national industrial recovery act administration and suggested price differentials applying to yarns to conform to the codes, occupied the attention of the Philadelphia yarn trade for so large a part of July, to the almost utter exclusion of disposing of inquiries and orders for yarn, that actual sales for future were comparatively light, with business apparently backing up for disposition as an aftermath of activities of the open season for codes for control of producing and distributing. Probably the more sensational incidents in the days following announcement of the cotton code were the suggestion of additions to contract prices for combed peeler and mercerized yarns and announcement of advances by one spinner and mercerizer virtually ignoring the proposed table of additions and differentials.

There was something startling in the announcement of suggested increases in invoice prices for combed peeler and mercerized. For 10s to 50s 2-ply the increases are from four to 8½ cents, increasing by a cent for each 10 counts to 40s and 1½ cents for 10s. Sixties and 70s are increased 10 and 12 cents respectively and 80s and 90s, 15 and 20 cents respectively. There are increases of 27½ cents on 100s, 37½ cents on 110s and 57½ cents on 120s, the differentials applying to mercerized and single and 2-ply combed peeler on contract and necessarily to then current quotations. Some of the Philadelphia houses were at the time not quoting, on either combed or carded, depending on the attitude of the spinners whose production they handle. During the excitement over current and prospective revisions a great deal of business, in both weaving and knitting yarns, was offered, much of it being declined by spinners. Sales of carded yarns out of Philadelphia warehouse stocks were consummated on virtually dealers' terms, and there was no denying the allegation that they were exacting prices sufficient to insure the safety of themselves and their mills with whom they were said to be arranging for replacement, this in the interest of customers as well as dealers.

Some of the yarn houses were favorable to giving no publicity to quotations pending government approval of the cotton code and more definite information on which they might base their increased operating cost under a 40-hour week schedule. Estimates of the increase ranged from 5½ cents to eight cents as an average—less on coarse counts and more on fine, of course. It was feared no firm quotations on sales yarns might be available until after spinners shall have operated for possibly a few weeks on a 40-hour week schedule. Some local interests professed to believe that might be preferable to having a cost basis computed by expert accountants.

For the time the Philadelphia yarn trade was pretty much at sea on nearly all matters pertaining to yarn except the matter of prices for spot out of Philadelphia warehouse. It was realized that the extent to which deliveries at the new prices applicable to old contracts may depend in considerable measure on the attitude of distributors toward manufacturers, in view of the cotton processing tax and the floor tax on yarns and goods in warehouses. Thus, while there was abundant evidence in July of cumulative demand for yarns, some confusion is to be expected. The extent and effect of this seems to have been discounted by some houses.

Late quotations on single combed peeler yarns to the time the cotton code was made public were around 45 to 46½ cents for 38s, to which was later to be added around six cents under the proposed table of differentials recommended by fine yarn spinners. Late quotations on 10s single, carded, cones, were 26, skeins 25 cents and 26½ for 2-ply warps, prior to announcement of the code, subject to increases of 2¾ to 9¼ cents for singles and 3¼ to 10 cents for ply.

Tentative Philadelphia prices, published July 17, subject to spinners' confirmation, follow:

**Single Skeins.**

| | | | |
|---|---|---|---|
| 4s to 8s | 27¼ | 10s | 28½ |
| 12s | 29¼ | 14s | 30 |
| 16s | 30¾ | 20s | 32½ |
| 24s | 35½ | 26s | 37 |
| 30s | 40 | | |

**Single Warps.**

| | | | |
|---|---|---|---|
| 10s | 28½ | 12s | 29¼ |
| 14s | 30 | 16s | 30¾ |
| 20s | 33½ | 26s | 37½ |
| 30s | 40½ | | |

**Two-Ply Skeins.**

| | | | |
|---|---|---|---|
| 8s | 28¼ | 10s | 29 |
| 12s | 29¾ | 14s | 30½ |
| 16s | 31½ | 20s | 33½ |
| 24s | 36 | 26s | 37½ |
| 30s | 40½ | 40s | 48 |

**Two-Ply Warps.**

| | | | |
|---|---|---|---|
| 10s | 29½ | 12s | 30¼ |
| 14s | 31 | 16s | 31¾ |
| 20s | 33½ | 24s | 36½ |
| 26s | 38½ | 30s | 41½ |
| 40s | 50 | | |

**Frame Spun Carded Cones.**

| | | | |
|---|---|---|---|
| 8s | 28¼ | 10s | 29 |
| 12s | 29¾ | 14s | 30½ |
| 16s | 31¼ | 18s | 32 |
| 20s | 32¾ | 22s | 34¼ |
| 24s | 35¾ | 26s | 37¾ |
| 30s | 40¼ | 40s | 48¾ |
| 30s double carded | 42 | | |
| 30s tying-in | 38½ | | |

**Carpet Yarns.**

| | |
|---|---|
| 8s and 9s white warp twist | 27½ |
| 8s tinged tubes | 25½ |
| 8s part waste | 24½ |

**Two-Ply Combed Peeler Skeins and Warps.**

| | | | |
|---|---|---|---|
| 8s to 16s | 37½ | 20s | 42½ |
| 24s | 45 | 30s | 48½ |
| 40s | 55½ | 50s | 59½ |
| 60s | 67 | 70s | 71 |
| 80s | 95 | | |

**Single Combed Peeler Yarns on Cones.**

| | | | |
|---|---|---|---|
| 10s | 37½ | 14s | 39 |
| 16s | 40 | 18s | 41½ |
| 20s | 42½ | 24s | 45 |
| 30s | 48½ | 36s | 51½ |
| 38s | 53 | 40s | 55½ |
| 50s | 59½ | 60s | 67 |
| 70s | 71 | 80s | 95 |

**Mule Spun Carded Yarn on Cones.**

| | | | |
|---|---|---|---|
| 10s | 33½ | 12s | 34¼ |
| 14s | 35½ | 16s | 36¼ |
| 18s | 37 | 20s | 37¾ |
| 24s | 40¼ | 28s | 42¼ |
| 30s | 43¾ | 40s | 51¾ |

**Mule Spun Combed Peeler Yarn on Cones.**

| | | | |
|---|---|---|---|
| 10s | 42½ | 12s | 43¼ |
| 14s | 44 | 16s | 44½ |
| 14s | 44 | 16s | 44½ |
| 18s | 45¼ | 20s | 47 |
| 22s | 48¼ | 26s | 49½ |
| 28s | 50¾ | 30s | 53 |
| 36s | 53¾ | 38s | 58¼ |
| 40s | 59 | | |

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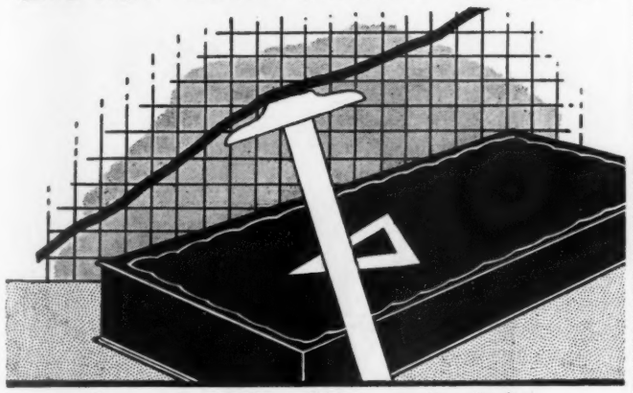

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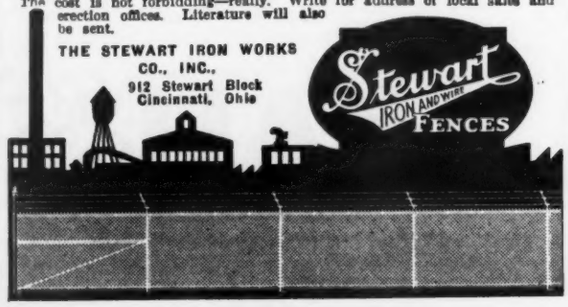

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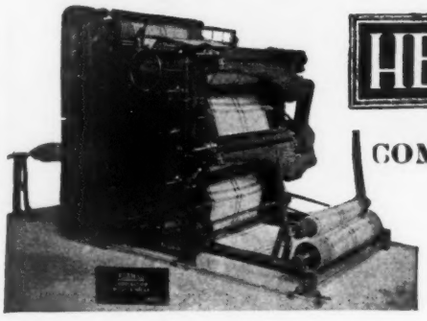

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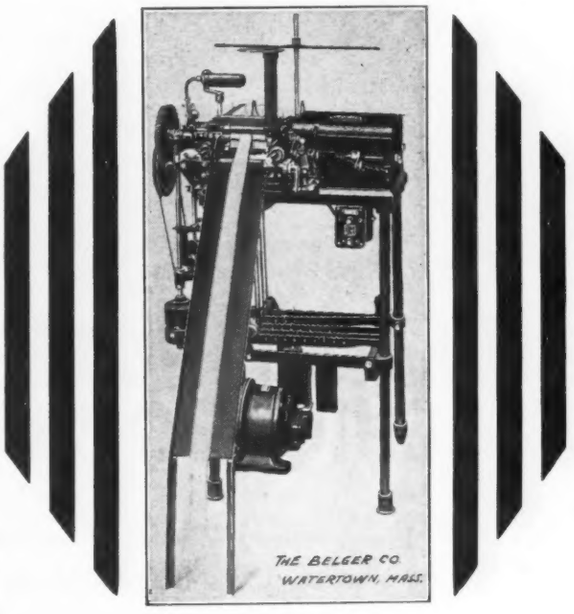


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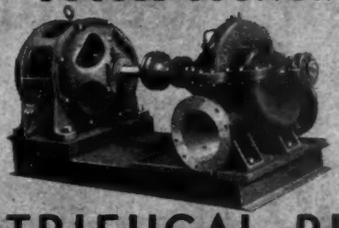

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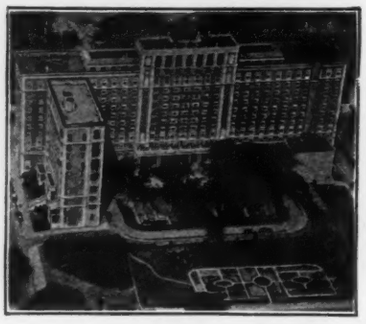

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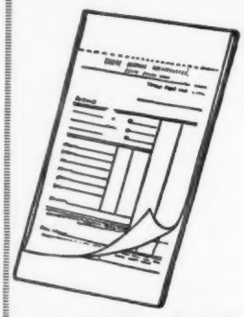

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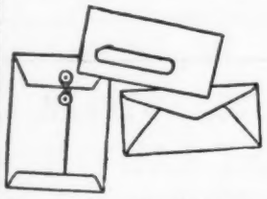

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## LOWE MILLS, INC.

Notice is hereby given that the undersigned, A. F. Mullins, Jr., of Shelbyville, Tennessee, will sell at public auction, at the office of Lowe Mills, Inc., at Huntsville, Alabama, on the 23rd day of August, 1933, at 3:00 o'clock P. M. (Eastern Standard Time) on that day, for the account of whom it may concern, the real and personal property of Lowe Mills, Inc.

Lowe Mills, Inc., owns, free and clear without encumbrances of any kind, a cotton mill at Huntsville, Alabama, known as "Lowe Mill," with 28,672 spindles, 660 looms (Drapers), 420 of these looms being less than five years old, with individual motor drives. The mill is supplied with Barber-Colman high speed Spooler and Warper equipment, and is located at Huntsville, Alabama, in the fertile Tennessee valley, the textile section of northern Alabama. Among the other mills at Huntsville, Alabama, are the mills of Merrimack Manufacturing Company, Dallas Manufacturing Company, and Lincoln Manufacturing Company. The territory is supplied with cheap power and the promise of still cheaper power through the government development of Muscle Shoals. The mill is furnished with preparatory equipment for the production of print cloth yarns for book cloth and shade cloth, with 100 looms equipped for marquisettes, and has buildings with vacant floor space sufficient for additional 10,000 spindles without rearrangement of present equipment; two main brick mill buildings, warehouses; agents' residences; office and store buildings, and 172 operatives' houses.

For detailed statement of the property, including machinery and equipment, description of real estate, and terms of sale (to be read at the time and place of sale) kindly address Donald Comer, Esq., 58 Worth Street, New York, New York.

Inspection by interested parties is invited, and the undersigned, Mr. A. F. Mullins, Jr., who is in charge of the property, will be glad to show it to interested parties at any time. It is suggested that prospective buyers communicate with Mr. Mullins and arrange to visit the property.

The successful bidder will be requirea to pay 10% of the purchase price in cash at the time and place of sale, 15% of the purchase price in ten days' time thereafter, and the seller will accept the purchaser's note for the balance of the purchase price, payable in three equal installments of ninety days each, secured by a mortgage on the property.

The seller reserves the right to bid at the sale.

Dated: This 22 day of July, 1933.

A. F. MULLINS, JR.

## SHELBYVILLE MILLS COMPANY, INC.

Notice is hereby given that the undersigned, A. F. Mullins, Jr., of Shelbyville, Tennessee, will sell at public auction, at the office of Shelbyville Mills Company, Inc., Shelbyville, Tennessee, on the 23rd day of August, 1933, at 11:00 o'clock A. M. (Eastern Standard Time) on that day, for the account of whom it may concern, the following securities in one lot:

Two hundred fifty (250) shares of common stock without par value of Shelbyville Mills Company, Inc., a Tennessee corporation, being all of the issued and outstanding shares of stock of said corporation.

Shelbyville Mills Company, Inc., owns, free and clear without encumbrances of any kind, a cotton mill at Shelbyville, Tennessee, known as "Shelbyville Mill." Shelbyville is located in the white farming section of Tennessee, adjacent to the Duck River, in cotton growing territory, and furnishes high-class mill labor. The mill has approximately 23,000 spindles, 594 looms (Drapers) balanced for 22" yarns, and preparatory equipment, in condition for immediate operation, producing Wide Drills, Twills and Sheetings; approximately 95 acres of land; large two story brick mill of approximately 110,000 square feet floor space; one story new Weave Shop (built four years); store and office building; and 112 operatives' houses.

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Inspection by interested parties is invited, and the undersigned, Mr. A. F. Mullins, Jr., who is in charge of the property will be glad to show it to interested parties at any time. It is suggested that prospective buyers communicate with Mr. Mullins and arrange to visit the property.

The successful bidder will be required to pay 10% of the purchase price in cash at the time and place of sale, 15% of the purchase price in ten days' time thereafter, and the seller will accept the purchaser's note for the balance of the purchase price, payable in three equal installments of ninety days each, secured by a deposit of the above stock and a mortgage on the property.

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Dated: This 22 day of July, 1933.

A. F. MULLINS, JR.

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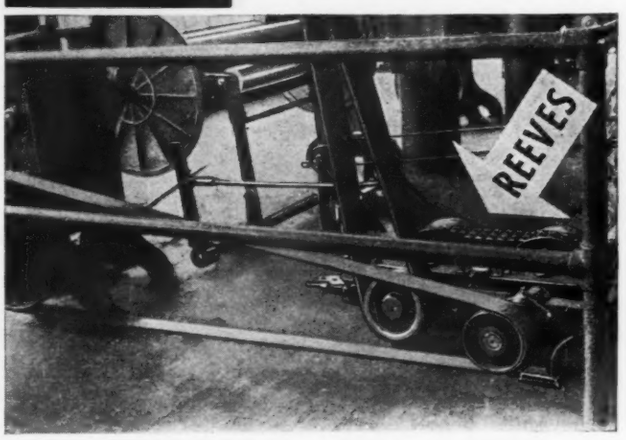


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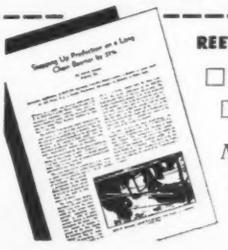

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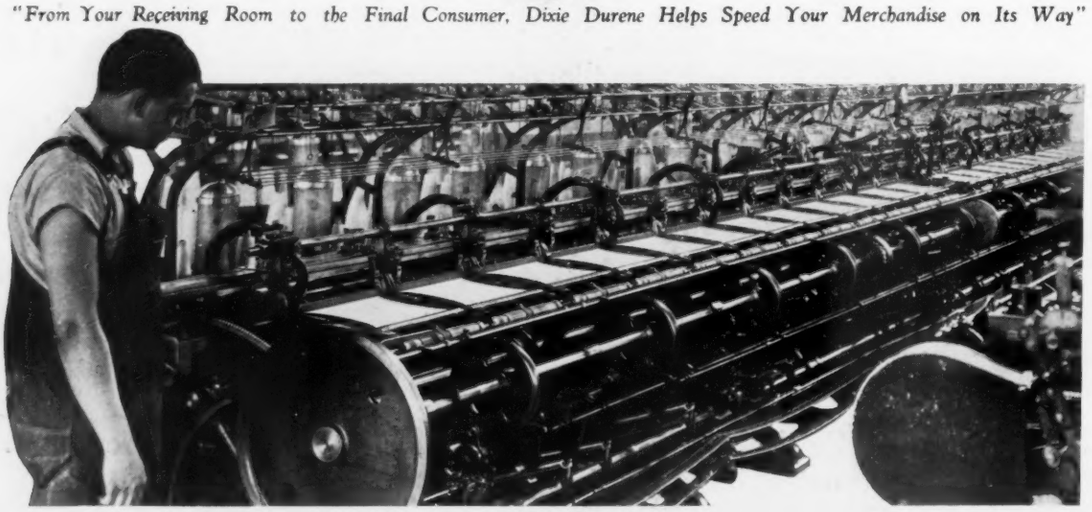
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